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Original Articles

SPINAL LOCALIZATION

AS SHOWN BY A CASE OF ACUTE HEMORRHAGIC MENINGOMYELITIS, WITH SECONDARY SOFTENING AND CAVITY FORMATION.*

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The case which furnishes the text for this paper occurred recently in my service at the Philadelphia Hospital. It supplies some valuable data for spinal localization at the seventh and eighth dorsal segments. It also presents a unique example of rapidly fatal hemorrhagic meningomyelitis, with extensive secondary softening and cavity formation, originating in the lumbar cord and stopping abruptly in the eighth dorsal segment.

There is seldom seen, I believe, a case of acute myelitis of such distinct localizing value, nor one which presents such a rapidly fatal course from apparently slight beginnings. I report the case because, first, there still seems to be a demand for more accurate localization at and about the neighborhood of the umbilicus, and, second, because the sections are of such great interest from the pathologic standpoint, raising the question, as they do, of a possible acute syphilis of the cord.

Patient.—S. P., male, colored, aged 34, was admitted to the Philadelphia Hospital, April 4, 1907, with paralysis of motion and sensation below the waist.

History.—He gave a history of having been injured by being thrown from a trolley car in January, 1906, more than one year before. He was confined to bed for six weeks, and always had some pain in the back afterward, yet was able to attend to his work, that of a Pullman porter, for fully a year, until taken with his final illness. He had had syphilis some years before. Five weeks before his admission to the hospital he came home from work, feeling weak and ill. The next morning he had numbness in his legs, with some loss of power. This kept growing worse, until in less than a week he was paralyzed in both his legs. He also had a girdle pain about his waist, and lost entire control of his bowel and bladder. He was burned on one occasion on each foot by hot bottles because he did not feel them. A deep bed sore soon formed on the sacrum.

Examination.—This was his condition on admission. He was totally paralyzed in his lower limbs, and, of course, unable to stand. There were no contractures, and, what was especially noteworthy, his knee-jerks were abolished. The abdominal and cremasteric reflexes were also abolished, and there was no plantar extensor reflex. Below a line drawn around his waist at a little below the lower margins of the ribs, and therefore about two inches above the umbilicus, there was total abolition of all modes of sensation (Fig. 1). This uppermost line extended further up about one inch after his admission, until finally it was at about the lower costal borders. It was not a perfectly straight line, but extended upward a little in the mid-line and was slightly higher in the back. The patient was unable to distinguish heat, cold, pain, or touch, below this line, or to tell the position of his lower limbs. He complained of pain at the upper level of the anesthesia, and his spine at the seventh and eighth dorsal vertebræ was extremely sensitive. There was dribbling of urine and incontinence of feces. The bed sore was intractable. About two weeks after admission the patient complained of pain and stiffness in his back, and difficulty of swallowing; also of some numbness in one arm, but these symptoms did not persist, and were possibly hysterical in type. There were no lesions found after death to account for them. A lumbar puncture was performed by Dr. Peterson, the resident physician, and about 15 c.c. of clear fluid withdrawn. This proved to be acellular and sterile. In view of the nature of the lesion determined postmortem, this acellular state of the cerebrospinal fluid is rather surprising. An *x*-ray picture was taken and showed slight haziness in the intervertebral space between the ninth and tenth dorsal vertebræ, more marked on the left side. The spaces between the tenth, eleventh, and twelfth dorsal vertebræ were also clouded, but equally on both sides. The appearance suggested a gross lesion, such as tumor or hemorrhage, rather than a myelitis, and is especially interesting in view of the fact that neither tumor nor extra-medullary hemorrhage was found at the autopsy.

Subsequent History.—The case progressed rapidly toward a fatal termination. The patient ran a febrile temperature, probably due to the bed sore and bladder infection. One very interesting symptom was sweating above, and dry skin below, the line of anesthesia. I have seen and described this before in grave transverse lesions of the cord.[1] An explanation of it has recently been attempted by Bruce, who has suggested that it is due to involvement of the intermedio-lateral tract, but this seems to me entirely theoretical. The patient's strength failed rapidly, the heart became irregular and slow; and for the last 24 hours he had distressing hiccough. He died May 4, about 9 weeks after the acute onset of his symptoms.

In a later statement the patient's wife told me that for at least three months before being taken with his final illness he had been suffering with pain and stiffness in the back, eccentric pain about the navel, difficulty in rising from a chair, and loss of sexual power. These symptoms probably indicated that during this precedent period he had been having slight leptomeningitis. As he had not been subjected to expert examination, it is impossible to state to what extent the disease had progressed, but it had not interfered with his work as a porter.

Microscopic Examination of the Cord.—The sections in this case were prepared with great care by Dr. C. D. Camp, assistant neurologist, on duty with me in the hospital. The spinal cord from the level of the eighth cervical segment downward was removed for examination and preserved in 10 per cent. formalin solution. Microscopic sections were made from the levels of the top of the fifth, fourth, and second lumbar segments; the middle and top of the first lumbar, twelfth, eleventh, tenth, ninth and eighth thoracic segments, and from the top of the first thoracic segment, and stained with the hemalum-acid fuchsin stain and the Weigert hematoxylin stain. Nerve cells were studied with the thionin stain. Sections were stained by the Marchi osmic acid method from the levels of the middle of the first and top of the seventh thoracic segments.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. A Case of Hematomyelia, Jour. of Nerv. and Mental Dis., February, 1900.

Summarized, a study of these sections showed that below the fourth lumbar segment there was no lesion. Beginning in the fourth lumbar segment and extending into the eleventh thoracic segment, there was an area of intense meningomyelitis, with the following characteristics: The pia, especially the posterior portion, was much thickened, apparently by a fibrinous exudate rather than by proliferation of the tissue. There was an intense infiltration of cells, leucocytes and lymphocytes, about the blood vessels in the pia. The pial vessels were full of blood; all the walls of the smaller were thickened. The

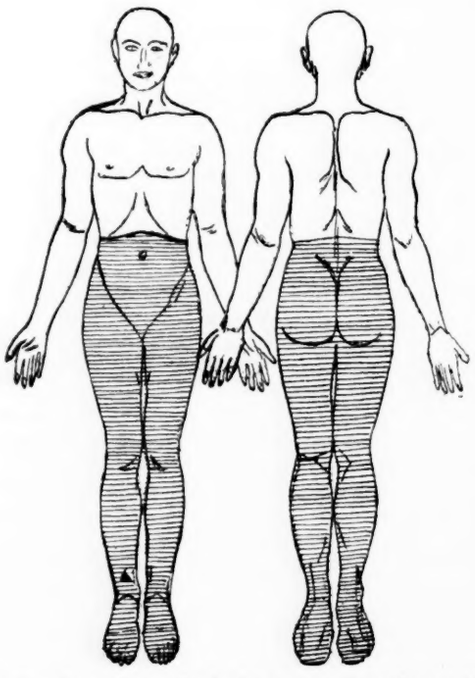

Fig. 1.—Area of anesthesia in a case of meningomyelitis.

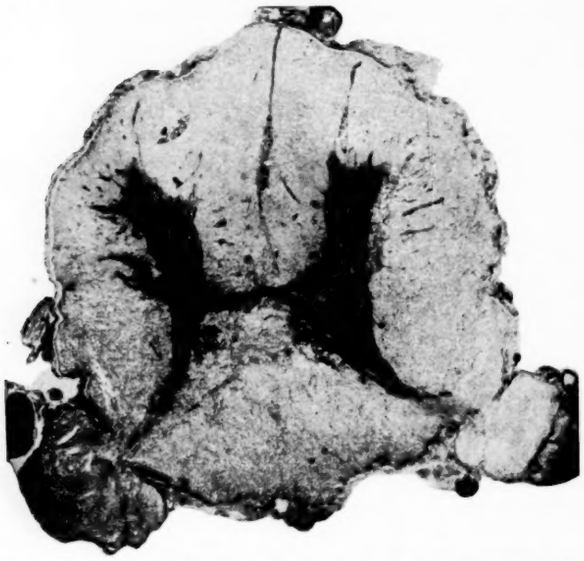

Fig. 2.—First lumbar segment in a case of meningomyelitis.

walls of the larger blood vessels did not show any proliferation of the intima. The posterior roots as they entered the cord were apparently constricted by the swollen meninges, and just outside of the meninges the nerve roots were swollen and the nerve fibers reduced to a granular débris. Not all the posterior roots were affected in this way; some were normal. Within the cord the blood vessels were congested, and there were numerous hemorrhages, especially in the gray matter; these were of recent occurrence, as shown by the partial preservation of the form and color of the red blood corpuscles. In the section from the second lumbar segment there was seen an immense dilatation of the artery in the anterior fissure, with a hemorrhage in the posterior part of the anterior fissure, as large as the anterior horn at this level. The walls of the smaller blood vessels were much thickened, and they were surrounded by masses of cellular infiltration. Although the white matter stained deeply with the Weigert hematoxylin stain, the myelin had a disintegrated appearance and with the hemalum-acid fuchsin stain appeared granular and swollen. Axis cylinders were swollen or in many cases had entirely disappeared (Fig. 2).

Sections from the level of the top of the eleventh thoracic segment showed the pia congested, but only slightly thickened and with a moderate round-cell infiltration about the blood vessels. The blood vessels within the cord were congested, especially in the posterior and lateral columns. The myelin sheaths had the swollen and granular appearance that was noted in levels lower down in the cord. There were numerous spaces in the cord from which fibers had dropped out, and also numerous swollen axis cylinders in all parts of the section (Fig. 3).

At the level of the top of the tenth thoracic segment there was an area of softening in the gray matter of the posterior root, on the right side, just posterior to the position of the column of Clark. It consisted of granular débris and fatty granular cells. The pia at this level was normal and the blood vessels within the cord showed no thickening of their walls

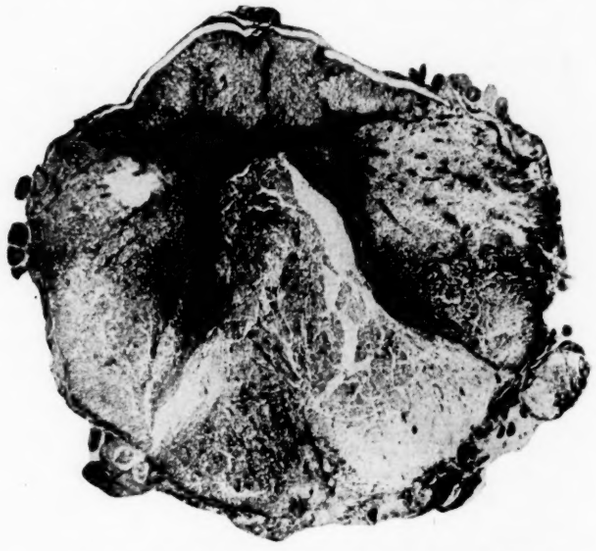

Fig. 3.—Tenth thoracic segment; meningomyelitis.

or any evidence of inflammation. At the level of the middle of the ninth thoracic segment this area of softening was much larger and occupied the entire anterior two-thirds of the posterior columns. It was smaller and round at the top of the ninth thoracic segment and tapered to an end at the level of the middle of the eighth thoracic segment. Sections from the first thoracic segment showed some disintegration of the myelin in the columns of Goll, but otherwise the section appeared normal when stained by the hemalum-acid fuchsin and Weigert hematoxylin stains.

At the level of the seventh thoracic segment there was recent degeneration in the direct cerebellar tracts and in the columns of Goll and to a slight extent in the columns of Burdach. At the level of the first thoracic segment there was recent degeneration in the direct cerebellar tracts and in the columns of Goll.

The nerve cells in the anterior horns were normal at the level of the first thoracic segment. In the lumbar segments the nerve cells of the anteior horns had entirely disappeared. In the sections from the ninth thoracic segment (Figs. 4 and 5) the nerve cells of the anterior horns had undergone marked degenerative changes, with chromatolysis, displacement of the nucleus, and loss of processes. The cells of the intermediolateral tract show the same changes as the motor cells.

My explanation of these findings is as follows: In the four upper lumbar segments there was an intense meningomyelitis, with small hemorrhages in the substance of the cord. The thickened pia and thickened blood vessels suggest that the initial lesion was a syphilitic leptomeningitis at this level, and this is borne out by the clinical history, for the man had irritative symptoms for some months before the onset of the sudden acute exacerbation. The blood vessels, it is true, did not show the precise picture, as drawn by Heubner, of syphilitic endarteritis; in some places the intima was nearly destroyed, not thickened, the elastic tissue, which showed very plainly, being the innermost membrane left. The adventitia was much thickened. But it may be questioned whether Heubner and his followers are not rather too dogmatic in their statements about the appearance of syphilis of the blood vessels. The picture may vary more than they allow. For instance, there is a well-recognized periarteritis, as described by Kussmaul and others. In this form, as in my case, there is great thickening and infiltration of the outer coat. The pinching of the posterior roots by the thickened pia was very plainly shown, and suggests the idea of Nageotte, Redlich and Obersteimer, who think they find in a similar condition the essential cause of locomotor ataxia of syphilitic origin.

Fig. 4.—Ninth thoracic segment; meningomyelitis.

In the first lumbar segment there was a large hemorrhage in the anterior fissure and a very large congested blood vessel from which apparently the blood had escaped. An area of softening and cavity formation began in the eleventh dorsal segment and extended upward. The substance of the cord was much disintegrated. This area of softening ultimately occupied a large space in the posterior columns and had broken down and formed a cavity visible to the naked eye. It ended abruptly in the eighth dorsal segment. This softening with cavity formation was probably secondary to the main lesion lower down, and occurred as the terminal process of the case.

Above the eighth segment the cord was practically normal, and the absence of ascending degeneration of any marked degree is in favor of the very recent and acute nature of the lesions.

The idea that the case was of syphilitic origin is borne out by the history of syphilis, by the exudative leptomeningitis, by the thickened arteries, and by the acute hemorrhagic myelitis with secondary softening and cavity formation; for, as Oppenheim points out, this formation of cavity may happen in syphilis of the spinal cord.

Acute syphilis of the spinal cord is comparatively rare. The syphilitic process is usually slow and chronic. In the present case it would possibly be proper to say that there had been a slight chronic leptomeningitis lasting for some months and then an onset of fulminating symptoms, caused by an acute hemorrhagic myelitis with secondary softening and cavity formation, lasting but a few weeks. It is not probable that the trauma was of special significance, unless it was to furnish a starting point for syphilitic infection, as it is well known to do in some cases.

According to the view of Sottas, Dejerine and some others, a process of softening is very common as a secondary effect in spinal syphilis. The initial lesion is vascular and is located especially in the membranes.

Fig. 5.—Ninth thoracic segment (higher level than in Fig. 4); meningomyelitis.

Cavity formation has also been described by Van Gieson in traumatic cases, and they are not unlike the one here presented. Van Gieson thought they were secondary to small hemorrhages. It has even been claimed that syringomyelia may be secondary to traumatic hemorrhage, and the resemblance in some ways is marked. But in the present case the cavity is in the white matter rather than in the gray matter, as in syringomyelia.

The localization in this case points to the eighth thoracic segment. The sections showed that the cavity ends in that segment rather abruptly and that there was only slight evidence of degeneration in the seventh segment. Sherrington[2] has shown in his experiments on monkeys and cats that there are what he calls "overlaps" in each area of skin innervated by the dorsal nerve roots. Thus each band-like area innervated by the eighth segment, for instance, has also sensory filaments from the seventh above and from the ninth below. In other words, there is no area supplied exclusively by

2. Trans. Phila. Soc., Lond., 1893, vol. clxxxiv, pp. 341-763.

any one segment (as Türck and others of the older physiologists taught), but every thoracic area is supplied by at least three segments, viz.: its own segment and the one above and one below. According to this view, a lesion located in the eighth thoracic segment would cause absolute anesthesia only in the lower half of its own skin area and impaired sensation in the upper half; this because the upper half is supplied from the seventh segment in part. If this holds true in this case, it tends to put the area supplied by the eighth segment in about the same location as given in the diagram of Head, who places the umbilicus at the lower margin of the ninth area. It also corresponds closely to the mappings out by Sherrington on the body of one of his monkeys.

It need not be insisted on here that the exact localization of the spinal sensory areas on the trunk is of great practical importance, both in neurology and in surgery. Hence the care taken to present this case.

DISCUSSION.

DR. WM. J. SULLIVAN, Lawrence, Mass., asked Dr. Lloyd whether in his opinion degenerative condition of the cord accompanying locomotor ataxia is due entirely to syphilitic poisoning? By some these changes are said to be due to syphilis in 85 per cent. of the cases, and by others in 100 per cent of the cases, and that the history of syphilis is found in 100 per cent. of the cases.

DR. WILLIAM G. SPILLER, Philadelphia, referring to the level of the umbilicus and the sensory area said that some years ago he studied that question in fracture of the cord, and found it was in the tenth thoracic segment of the cord. I have seen in three cases the area of sensation was sharply limited in the trunk. Horsley makes mention of the same thing, and Sherrington's views would indicate that the edge should shade off gradually into the field of normal sensation.

DR. JAMES HENDRIE LLOYD, Philadelphia, closing, referred to the theory held by some that tabes is the result of leptomeningitis of the posterior nerve roots. He did not wish to say that he would commit himself to this theory, because he does not know how tabes is actually caused. He has gone over the subject very carefully recently, especially with reference to these syphilitic cases, and can not make out any absolutely satisfactory *modus operandi* in the case of tabes. It may be, he said, that it is merely an atrophy of the neurons of the posterior columns. In some cases of syphilitic leptomeningitis of the posterior aspect of the cord, there occurs a pinching of these posterior roots. That condition is very clearly shown in the present case. Dr. Lloyd sees a great many cases of myelitis, but the case which he presented is one that was of especial interest. The points in which it is of peculiar interest are (1) it seems to suggest the possibility of acute syphilis of the cord; (2) it shows secondary cavity formation very clearly; (3) it is sharply delimited in the eighth segment; therefore, it gives localizing data for the eighth segment of the thoracic portion of the spinal cord.

Serum Therapy.—R. Chiarolanza, in the *Policlinico*, June, 1907, reports the results of experiments with different antistreptococcus and antipneumococcus sera in the corresponding infections. The experiments are described and tabulated; the results are stated substantially as follows: 1. Heterogeneous serum in small doses may exercise a preventive action in rabbits against microbes of slight pathogenic activity (e. g., mildly virulent streptococci). 2. The same serum in small dose has no preventive action against virulent streptococci and, also, if in larger doses, hastens the lethal outcome of the infection. 3. Antistreptococcic sera of different makers (Aronson, Tavel) have no preventive action against virulent streptococci, even when the dose is very small. 4. The specific heterogeneous serum against pneumonia (Pane) has a constant preventive action against pneumococcus infection, and this was observed when the infection was introduced after a traumatism (laparotomy) as well as when it was simply injected into the uninjured peritoneum.

FACIAL HEMIATROPHY.

STATISTICAL REVIEW OF ETIOLOGIC FACTORS AND PATHOGENESIS. REPORT OF A CASE WITH MORPHOLOGIC STIGMATA.*

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It has been suggested that facial hemiatrophy is primarily caused by arrest of development during the growing period or toward the end of it. As far as I have been able to find, there are no typical cases recorded that support this view, and as a prominent feature in the case that is the object of this paper which I offer as an apology for introducing a subject that has been thoroughly and repeatedly discussed and is perhaps not of special interest.

Since Parry[1] first described facial hemiatrophy, particularly since the investigations of Romberg,[2] Lande[3] and Eulenburg,[4] the number of reported cases has been slowly increasing; nevertheless the disease is still comparatively infrequent; for this reason, and from the fact that our knowledge of nerve influence on nutritive processes is incomplete with but one satisfactory postmortem examination,[5] the etiology and pathology of the disorder can not be definitely disposed of.

Neither time nor space will permit of the consideration of the various theories on the causation of facial hemiatrophy, and it will suffice to refer to them in the discussion of this case. Any attempt at a physiologic interpretation of the symptoms will reveal the fact that the disease can not be limited to any one system. The trophic, vasomotor and sensory and motor fibers are involved. I have collected 83 typical cases which are divided into two distinct groups according to the predominance of certain clinical features.

1. Those cases in which the atrophy is complete without functional disturbance of the facial muscles, with little or no disturbance of cutaneous sensation and no vasomotor symptoms.

2. Those cases presenting, in addition to the clinical picture of the first division, vasomotor symptoms, flushing or paleness, temperature differences and secretory disturbances.

In this classification I have eliminated those cases of unilateral facial atrophy associated with facial paralysis, facial asymmetry associated with congenital wryneck, facial atrophy in poliomyelitis and hemiplegia of infants and adults[6] and that following nuclear lesions.

Of the 83 cases collected, 57 belong to the first division and 26 to the second. Of the 57 cases in the first division, 38 of the patients were women, and the percentage was about the same in those of the second division. In 29 of the 83 cases the patients were under the age of 10 years, 37 between 10 and 20, and 17 between 20 and 30. There are two cases, one of a patient at the age of 75 and one at the age of 81 years reported by Touche,[7] that are not included in this list. These cases were associated with other conditions due to a widespread cerebral degeneration. Another case was re-

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Collected writings, 1825, i, 478.
2. Klinische ergebenisse, Berlin, 1846, p. 75.
3. Essai sur l'aplasie lamineuse progressive celle de la face en particulier, Paris, 1870.
4. Lehrbuch der functionellen nervenkrankheiten, 1871.
5. Virchow-Mendel: Neurologisches Centralblatt, No. 14, 1888.
6. Oran: Jour. Nerv. and Ment. Diseases, September and October, 1850.
7. Revue Neurologique, 1892.

ported by Bannester[8] of a patient at the age of 42, the condition following a severe trauma with cerebral symptoms, both physical and mental. While these cases are instructive, they are not true instances of this disorder. It is noteworthy that in 61 cases of the above group the atrophy was on the left side, in 23 some injury preceded the onset of the disease.

In one case, also reported by Bannester,[8] a man suffered repeatedly from frost bites, which were followed by facial hemiatrophy. In another case first observed by Herdman, and a few years later by me, a severe frost-

Fig. 1.—The photographs, a, b, c, d, e and g are of the patient and show the various conditions described in the text. The photographs f and h are of the twin sister of the patient and show slight deformity of the fingers and asymmetry of the face.

The illustrations used in connection with this paper were made by Mr. V. J. Willy and Mr. Hale, to whom I am indebted for the great care they have taken in executing them.

bite in the supraorbital region of the right side was followed by severe neuralgic pains. A few months later there was a wasting of the soft tissues, with loss of hair of the inner third of the eyebrow, and on top of the head just to the right of the median line there was a deep groove in the bone half an inch wide, extending upward and backward from the supraorbital arch for about five inches. Cutaneous sensation remained intact, motor function of the corrugator supercilii and occipitofrontalis were not impaired and no electrical differences were noted.

In 7 cases of the above group scarlet fever preceded the onset of unilateral facial atrophy, in 3 typhoid fever, in 5 erysipelas, in 2 suppurative tonsillitis, in 2 suppurative otitis media, in 3 abscesses in the neighborhood of the ear. In the remaining 39 cases no obvious cause could be found; 3 of these were preceded by severe neuralgic pains. Turner[9] states that direct heredity has been traced in a few cases; I failed to deduce this from the literature after eliminating the atypical cases. In the case which I am about to report there is a direct heredity of physical deviations occurring in successive generations, in the grandmother, in the mother and in two daughters, who are twin sisters. One of the twin daughters developed a complete unilateral atrophy of

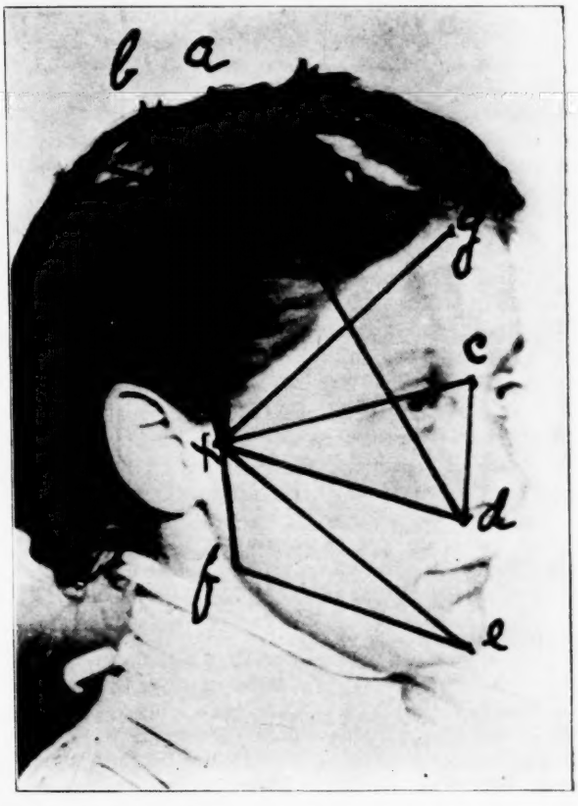

Fig. 2.—Photograph of patient showing lines of measurement as indicated in the text.

the right side of the face; the other has a noticeable asymmetry of the face and ears.

History.—The patient in question was 16 years old, a healthy robust-looking girl and very active. She was referred by Dr. Rowe, to whom I am indebted for the opportunity of seeing this patient repeatedly. She entered the University Hospital Nov. 16, 1906, where I first saw her. She stated that she came for the relief of headache, from which she had been a sufferer since her sixth year, and that she was obliged to give up her school one year ago on account of this disturbance; she further stated that her eyes had been examined by competent specialists, but she has found no relief from wearing of glasses. The patient complained of constant pain in the right occipital region radiating to the parietal and frontal regions of the same side. She also located the pain in the back of the neck between the third and seventh cervical vertebræ and in the

8. Jour. Nerv. and Ment. Diseases, 1876, iii, 539.

9. Albutt's System of Medicine, vi, 485.

right shoulder and arm. When she was 7 years old the mother first noticed the facial deformity, which had been steadily progressing. The parents were both living and in good health. There were two brothers and two sisters, all in perfect health. The paternal grandmother died at the age of 63 of paralysis (hemiplegia of the right side). Maternal grandfather died at 53 of pulmonary tuberculosis. The mother stated that the patient was a very nervous child, in direct contrast to her twin sister. There were no complications at the time of birth and labor was normal. There was nothing unusual in the development of the children until the patient was 6 years old. She had lung fever at the age of 3 months, measles, chicken-pox and whooping cough before she was 6 years of age. Menstruation appeared at 14. In her school work she kept up with her twin sister, completed the eighth grade when not quite 14 years old; at this time she did not attend regularly on account of persistent occipital and frontal headache. At about the age of 7 the mother first noticed a slight yellowish-brown discoloration of the skin in the supraorbital region on the right side and could feel a slight depression in the bone in that locality. She also noted a falling out of the hair on top of the head just to the right of the median line. The whole right side of the face became emaciated within a few months, a condition which steadily progressed. The patient thought that there had not been any notable change within the last two or three years.

Physical Examination.—Aside from the emaciation of the right side of the face, the patient's general appearance was good and she was well nourished. The thyroid gland was somewhat enlarged laterally, the musculature was well developed and of good tone, the skin was moist and elastic except over the right side of the face, there it was a little less elastic, most marked in the supraorbital region. On the right side there was a yellowish-brown discoloration of the skin in the same area. (Fig. 1, a.) There was a marked depression in the frontal bone, forming a groove 2 cm. (¾ in.) wide, extending from the supraorbital ridge upward and backward over the vertex just to the right of the longitudinal suture. (Fig. 1, b.) A radiogram made anteroposteriorly showed increased density of bone on the right side of forehead, while one made laterally revealed deep grooves in the frontal and parietal bones. The scalp was bare in this area and the hair surrounding it was thin and continually falling out. The right side of the face was plainly less full than the left, the subcutaneous adipose tissue seemed to be largely lacking, the muscles did not seem to have lost their volume, but hollows between them were noticeable. (Fig. 1, a), more prominent when the patient smiles. The right eye was slightly less prominent than the other. Careful measurements showed an appreciable difference between the two sides of the face and cranium. The right ear was smaller than the left (right ear 5.2 cm. long and 2.6 cm. broad; left ear 6.1 cm. long and 3.2 cm. broad). The points of measurements of the face and cranium are indicated in Figure 2 and need no further explanation. Measurements of the right side of the face, distance between a-x 11 cm., b-x 10.5 cm., g-x 10.1 cm., c-x 8.4 cm., d-x 7 cm., e-x 9.6 cm., e-f 7.2 cm., a-d 15.4 cm., g-d 8 cm. Left side of face distance between a-x 12.5 cm., b-x 11.7 cm., g-x 12.4 cm., c-x 10 cm., d-x 9.3 cm., e-x 11 cm., e-f 9.4 cm., a-d 17 cm., g-d 8 cm. The circumference of the cranium measured 51 cm., anteroposterior diameter 17.5 cm. The greatest transverse diameter 14.6 cm., binauricular arc 30 cm., binauricular diameter, 13 cm., naso-occipital arc 22.5 cm., naso-bregmatic arc 15 cm., right auriculo-bregmatic radius 13 cm., left auriculo-bregmatic radius 14 cm. The extremities were symmetrical in length and size except the little fingers in both hands are crooked and much shorter in proportion to the other fingers, the right being slightly the shorter (Fig. 1, g.) The examination of the respiratory, circulatory, digestive and abdominal organs revealed nothing abnormal. The urine and blood analyses were negative. The right eye was less prominent than the left, the expression and movement of the eyes and eyelids were not peculiar, the pupils were equal, central and regular, they reacted to direct and consensual light and accommodation, the corneal reflex was present, the left visual field was markedly contracted, the right slightly so, there was 1.5 degrees hyperopic astigmatism in both eyes, exophoria 2.5 degrees, in accommodation exophoria 15 degrees, abduction 10 degrees, adduction 20 degrees.[10] The hearing, taste and smell were not disturbed.

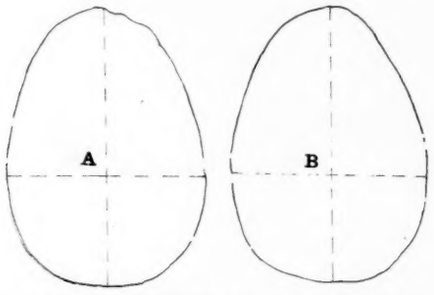

Fig. 3.—Cephaloscopic drawing of the horizontal circumference (A) of patient showing irregularity in the frontal line directly over the deformity; (B) of twin sister showing asymmetry.

The tactile sense of the two sides of the face was normal. Pain and thermal sense were not disturbed, careful and repeated examination revealed no disturbances of the cutaneous sensibility in any part of the body. Deep pressure over the great occipital nerve just as it pierces the complexus and trapezius muscles caused the patient excruciating pain; this was slightly more marked on the right side; the same condition was present in the great auricular of the right side and to some extent in the superficial branches of the suprascapularis of the same side. Aside from this there was a marked nerve-tenderness in all of the spinal nerve trunks.

The secretions, apart from slightly diminished perspiration on the right side of the forehead, were normal. The tears were said to be secreted normally on both sides, the same is true of the secretion of the mucous membrane of the nostrils. The salivary secretion was undiminished. The skin appeared more tense on the right side of the face, especially above the eye (Fig. 1, c.) The discoloration of the skin covered the narrow groove in the right side of the forehead immediately to the right of the median line. The temperature was carefully and repeatedly tested in both ears and over the surface of the face and no difference was found.

The deep reflexes were all active, not increased; the jaw reflex was not changed, the superficial reflexes were not disturbed, the corneal and pharyngeal reflexes were both present.

The motility of the facial muscles was not impaired, the tongue was protruded in the median line and there was no impairment of motion. In the muscles of mastication there was no difference in motion or strength of the two sides. The action of the occipitofrontalis and corrugator was normal, although somewhat restricted on the right side on account of the tenseness of the skin (Fig. 1, c.) The tongue, soft palate and muscles of the face presented no atrophy. Electrical reactions were normal in all of the muscles and nerves.

Examination of Sister.—The patient's twin sister declared that she was in perfect health and had been since childhood. She was a healthy looking individual and as far as the unaided eye could see there was no marked asymmetry of the face and head, as the photograph (Fig. 1, f) indicates. Careful measurements, however, revealed some differences. The same careful measurements were made in her case as in the patient. Right side a-x 11.5 cm., b-x 10.9 cm., g-x 11.5 cm., c-x 9.1 cm., d-x 8 cm., e-x 10 cm., e-f 8.5 cm., a-d 16.1 cm., g-d 8.1 cm. Left side a-x 12.3 cm., b-x 11.8 cm., g-x 12.7 cm., c-x 10.2 cm., d-x 9 cm., e-x 10.8 cm., e-f 9.3 cm., a-d 7.2 cm., g-d 8.1 cm. The circumference of the cranium measured 51.8 cm.; anteroposterior diameter, 17.8 cm.; the greatest transverse diameter, 14.8 cm.; binauricular arc, 30.6 cm.; binauricular diameter, 13.4 cm.; naso-occipital arc, 22.8 cm.; naso-bregmatic arc, 15.3 cm.; right auriculo-bregmatic radius, 13.2 cm.; left auriculo-bregmatic radius, 14.1 cm. In comparing the measurements of the two sides of the head a marked asymmetry was apparent; while the variations were not so great as in the patient's case, they were nevertheless noteworthy. There was no atrophy of the muscles nor loss of substance of the cutan-

10. The eye examination was made by Drs. Parker and Slocum.

ous or subcutaneous tissue nor bone, and the deviation was undoubtedly a defective development due to premature synostosis of the cranial sutures. The right ear was 5.8 cm. long and 2.9 cm. broad; the left measured 6.2 cm. long and 3.5 cm. broad; the appearance of the ears is not peculiar except the difference in size. The twin sister of the patient presented the same deformity of the little fingers that was noted in the patient herself, the shorter one being on the right hand. The mother and grandmother and one brother have the same defect. A careful and complete physical examination of the twin sister revealed nothing further of interest. The eye examination presented the same conditions that were found in the patient, but to a less degree.

In summing up the salient features of the case just described, I may briefly state that they are largely trophic in character; the discoloration of the skin, its diminished elasticity, the perceptible change in the perspiration and the atrophy of the subcutaneous tissue and bone, all point to a defective nutritive process. I may also mention that the persistent localized pain and marked nerve-tenderness are significant. An interesting condition is the cranial anomaly both in the patient and in her twin sister; this, however, can not be regarded as anything more than a developmental defect and possibly a predisposing cause and not as a condition resulting from the disease. Also the deviations of the ears and fingers are to be accepted in the same way.

In making careful comparisons of the measurements in the two cases it is evident where the evolutionary defect ends and the disease begins. The measurements of the right side of the face in the patient being out of proportion with those of the cranium on the same side and those of the opposite side, while in the twin sister they are uniformly diminished over the entire right side.

In the family history we have evidence of neuropathic heredity and debilitating conditions. In the personal history there is but one condition that may be regarded as an inciting cause, and that may be found in the acute infectious diseases which preceded the hemiatrophy. It is always doubtful how far this may have been a direct excitant. While acute infections are frequently associated with facial hemiatrophy, these diseases are very common at this time of life, and the association may be only a coincidence.

PATHOGENESIS.

The most difficult problem before us is the correct interpretation of the symptom-complex. It is now generally conceded by physiologists and neurologists that the vasomotor and trophic supply of nerves reach the peripheral parts, the skin, subcutaneous tissue, muscle and bone mainly, if not entirely, through the sympathetic nervous system, and the fibers for the head are supplied by way of the cervical sympathetic. Schiff and Meltzer[11] demonstrated that the ear receives vasomotor fibers from the great auricular nerve, a branch of the third cervical nerve. Vasomotor fibers are also carried by way of the cranial nerves and spinal nerves and the sympathetic ganglia with which they are connected. It is also stated that these fibers reach the fifth cranial nerve by communicating branches from the superior cervical ganglion. These fibers have also been demonstrated in the seventh and hypoglossal nerves. We may assume, therefore, that a lesion in these paths, particularly in the fifth cranial nerve, being a compound nerve, may cause sensory, motor and trophic symptoms.

While it is difficult to understand how in some cases the trophic fibers could be affected so extensively without some implication of the sensory or motor fibers, it is a clinical fact that in cases of neuritis of the nerves of the lower extremities a lesion in the sciatic may present various clinical pictures, motor and trophic disturbances without any change in sensation and *vice versa*. A very good illustration of this was presented in a case which I observed recently in a patient who suffered from pain, swelling and flushing of the left foot. There were no sensory or motor defects. It was found that there existed a marked tenderness of the sciatic at the point of exit; this was relieved and the disturbance in the foot disappeared.

Another case was that of a young woman 18 years of age, who complained of weakness and wasting of the left leg and pain in the left hip. The examination revealed marked tenderness in the sciatic at the emergence and along the course of the main trunk. There were no sensory disturbances, the temperature varied by two degrees in the two extremities. The left leg was much smaller than the right and the atrophy was at once apparent. The muscular tone and strength was much diminished in the calf muscles, but no marked paralysis was present and no reaction of degeneration. The condition in the sciatic was relieved and the patient improved promptly.

In cases of disseminated neuritis I have frequently noticed that the greatest severity of the trouble is on the left side and acute exacerbations are more common on that side. Why these variations occur depends on the particular fibers that are diseased in the nerve trunk, and in comparison I may state that all of the symptoms that have been observed in facial hemiatrophy have been presented in inflammatory conditions of the spinal nerves in other parts of the body. It may, therefore, be concluded that the wide variation in the symptoms is due to the extent of the lesion rather than to a difference in character.

From the statistical review it is evident that, in a majority of cases reported, the symptoms are those of disturbed trophic function, that the disorder is more or less acute and more rapidly progressive at the beginning of the disease and that the association with acute conditions is a close one, traumatism is not infrequent and infections are occasionally met with. In these points and in the close analogy of the symptoms with those occurring in neuritis there is evidence of a peripheral nerve lesion.

11. Howell's Physiology, 1906, p. 561.

A MIXED INFECTION WITH TERTIAN AND QUARTAN MALARIA OCCURRING IN A PATIENT WITH SYMMETRICAL GANGRENE.*

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For many years the idea has existed among various observers that there is a relation between symmetrical gangrene and malaria. This relation was hardly appreciated by Raynaud[1] in his thesis, although several of his cases were malarious subjects. In Case 6, which was reported in 1837 by Marchand, the patient was a woman who had had an outbreak of the gangrene six weeks after an attack of tertian malaria. Likewise the patient in Case 7 had had a three months' attack of tertian ma-

* Read in the Section on Practice of Medicine of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. De l'asphyxie locale et de gangrène symétrique des extrémités, Paris, 1862. Translation by Barlow for New Sydenham Society, London, 1888. Nouvelles recherches sur la nature et le traitement de l'asphyxie locale des extrémités, 1888.

laria preceding the gangrene. The patients in Cases 23 and 25 had had obscure fever. In the *New Researches* the patient in Case 1 was a malarious subject, and in Case 5 the patient had had attacks of fever. In 1869 Rey reported a case in which the patient had been affected with gangrene after attacks of intermittent fever in Senegal and later in France. In 1870 Marron reported a case in which the malaria occurred two years before the gangrene. Moursou (1873) is entitled to the credit of first claiming a relationship between the two affections.

In 1872 Raynaud, in spite of the histories of several of his cited cases, declares that he knew of no instance where malaria was the cause of the gangrene. In 1874 Charpentier reported to the Society of Medicine a case of paroxysmal local asphyxia associated with gastric pain which occurred always at the same hour and which was only relieved by quinin. This asphyxia returned five months later and again yielded to quinin. Calmette[2] claimed that local asphyxia of the extremities may follow, accompany or precede an attack of intermittent fever. In 1877 Vaillard reported local asphyxia in a man who had had tertian fever. In 1880 Moursou[3] collected 22 cases which showed the relation of malaria

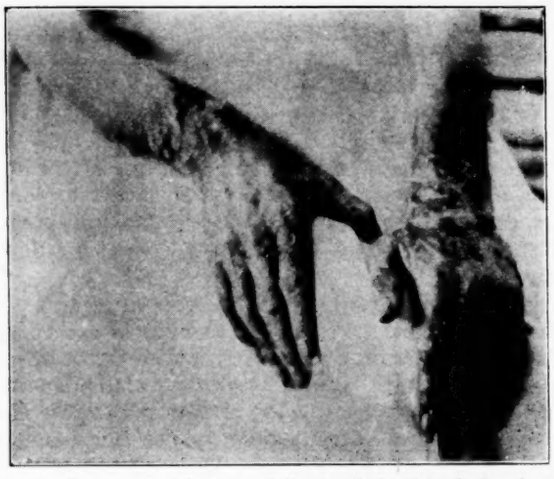

Fig. 1.—Symmetrical lesions of the hands in Case 8 showing definite lines of demarcation; spontaneous healing far advanced; second attack in these localities.

to Raynaud's disease. He stated that local asphyxia often occurs after intermittent fever, especially in obstinate cases of tertian and quartan and occasionally in pernicious malaria. Petit and Verneuil[4] showed that gangrene could occur in malaria, and they cited the case of Huguier (1855) which was one of gangrene of the prepuce and part of the glans which began in an attack of intermittent fever and was attended with a slough on the upper lip. Osler[5] reported the occurrence of multiple gangrene in estivo-autumnal infections, but the lesions were not symmetrical. Chmielewsky[6] reported the case of a woman with malarial cachexia who had typical Raynaud's disease with all the stages. The patient was 23 years old and lived in Tiflis.

During the past two years in Wilmington, N. C., there has been observed a number of cases of symmetrical skin lesions. The variations have been considerable, but the perfect symmetry has predominated every case. The classification of the lesion was difficult. In many respects Raynaud's disease was simulated, but none of the cases answered the description throughout. Dr. R. H. Bellamy had a remarkable series of cases and I am indebted to him for permission to use his notes.

CASE 1.—*History.*—The patient was a mulatto boy, aged 8, living in a very malarial neighborhood. The affection appeared in July, 1905. His parents were well and strong and there was nothing of note in the family history of either. Save malaria, the general hygienic surroundings were favorable. When seen there was found on the dorsum of each foot inflammatory areas which were symmetrical in position, shape and size. The inflammatory redness was followed by the formation of a bleb and later edema developed. The same process developed on the backs of both hands and the lower third of both forearms became edematous. Following this, the lesion next appeared beneath both eyes and later on the penis and scrotum.

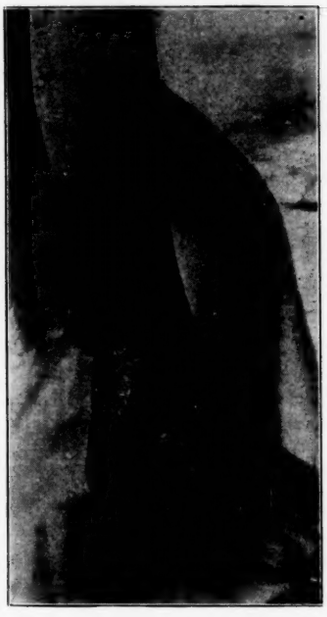

Fig. 2.—Ulcerative areas on foot and leg in Case 8; healing was spontaneous.

In each location there was edema. The temperature ranged from 100 to 102 F. Emaciation and anemia were well marked. Physical examination revealed no abnormalities.

CASE 2.—*History.*—The patient was a sister of the patient in Case 1, aged 12. In this case both feet, both hands and the skin beneath both eyes were affected symmetrically. The temperature ranged from 100 to 102 F. There were no blebs, as in Case 1. The lesion was at first moist, but later became dry, and the superficial skin was exfoliated. The patient died suddenly and a partial autopsy revealed nothing.

CASE 3.—*History.*—This patient was a brother of the two preceding patients, aged 4. The lesion was found on both hands, both feet, and beneath both eyes. As in Case 2, the lesions were moist and later became dry and exfoliated, and in this case there was sudden death.

CASE 4.—*History.*—The patient in this case was a sister of the preceding patients, aged 16. This case was characterized by a moist exfoliative condition of the skin of the last two phalanges of both middle fingers. The condition existed for two weeks and then healed spontaneously. There was no fever.

CASE 5.—*History.*—This patient was a white child, aged 4. Her previous medical history was negative except for tertian malaria. Both feet and one hand were affected with a simple dry exfoliative condition of the skin. The temperature ranged between 102 and 103 F. The child recovered.

2. Des rapports de l'asphyxie locale des extrémités avec la fièvre intermittente paludienne, Rec. de mémoires de méd., etc., 1887.

3. Etude cliniques sur l'asphyxie locale des extrémités, Arch. d. med., November, 1880.

4. Asphyxie locale et gangrène palustres, Rev. de Chir., 1883.

5. A Case of Multiple Gangrene in Malarial Fever, Johns Hopkins Hospital Bulletin, 1900, xi.

6. Jour. d. Nerven-und psychiat. med. v, No. 1, Russisch.

All of these five cases of Dr. Bellamy's list occurred in the same neighborhood and at the same time. The first four occurred in the same house. There was nothing noteworthy in the family histories, and a careful search for a cause was fruitless. The possibility of ergotism was excluded. Malaria was not expected and blood examinations were not made. Little assistance is furnished by the search for the plasmodia in such localities, as quinin is consumed so constantly by these people that the examination is worse than useless. The possibility of cold as a provocative agent was excluded by the season of the year and further by the fact that in this section extreme weather is unknown.

CASE 6.—*History.*—This patient was a girl, aged 2. She was seen through the courtesy of Dr. T. S. Burbank. The affection was a dry exfoliation of the superficial skin on the backs of both hands, symmetrical in every particular. It resembled Case 2 of Dr. Bellamy's series. Quinin had been taken when the patient was first seen and with larger doses there was recovery.

CASE 7.—*History.*—The patient whs a white man, aged 30. He was seen through the courtesy of Dr. Bellamy. There was an absence of specific history. He had been drinking beer somewhat immoderately for several months. He gave a history of repeated malarial attacks. Emaciation and anemia were marked. When first seen the patient was suffering with a violent stomatitis, strongly suggesting ptyalism. On the backs of both hands and also on the posterior surfaces of the forearms there were moist exfoliative skin lesions. The same condition existed on the back of the neck and, as was the case in the lesions of the hands and forearms, the symmetry both as to position and extent was very striking. Clinically the case was identical with the other cases, the chief point throughout being symmetry. The blood examination was negative, but this fact carries with it little weight, as the patient had probably taken enough quinin in his patent nostrums to render such a search useless. Soon after this the patient died of exhaustion. It was impossible to secure an autopsy.

In none of these cases was there any definite syncope and cyanosis. According to the classification of Monro,[7] these cases fall in his fourth class. He says this class has but a doubtful right to be called Raynaud's disease; that "local asphyxia invades the extremities, generally without a preceding stage of syncope, and passes rapidly or slowly, but steadily, without paroxysms on to gangrene. . . . This type occurs spontaneously or after acute fevers, and in most cases may affect more than one member of a family (Mankins,[8] Richard[9])." I am indebted to Professor Monro for his kind assistance in classifying these cases.

The studies of these cases were necessarily incomplete and would have proved of little importance had not another case come under observation which was clinically identical and which gave us a better opportunity to investigate. The case about to be described was similar in many respects to Case 2. For Case 8 I am indebted to Dr. W. D. McMillan.

CASE 8.—*History.*—The patient was a man, aged 46; his occupation that of a grocer. There was nothing of note in his previous medical history except an absence of syphilis and malaria. He was a remarkably strong, robust man. The beginning of his sickness occurred without any prodrome, with high fever which developed during the night and was followed by a profuse sweat. One week later his wife noticed that he was acting peculiarly. Among the strange things which she noticed was that he would ring his own door bell instead of using his night latch. He seemed to be dazed and was unable to attend to his business, making many absurd mistakes. There were no outbursts and no other mental changes noticed except this dazed condition and a general apathy.

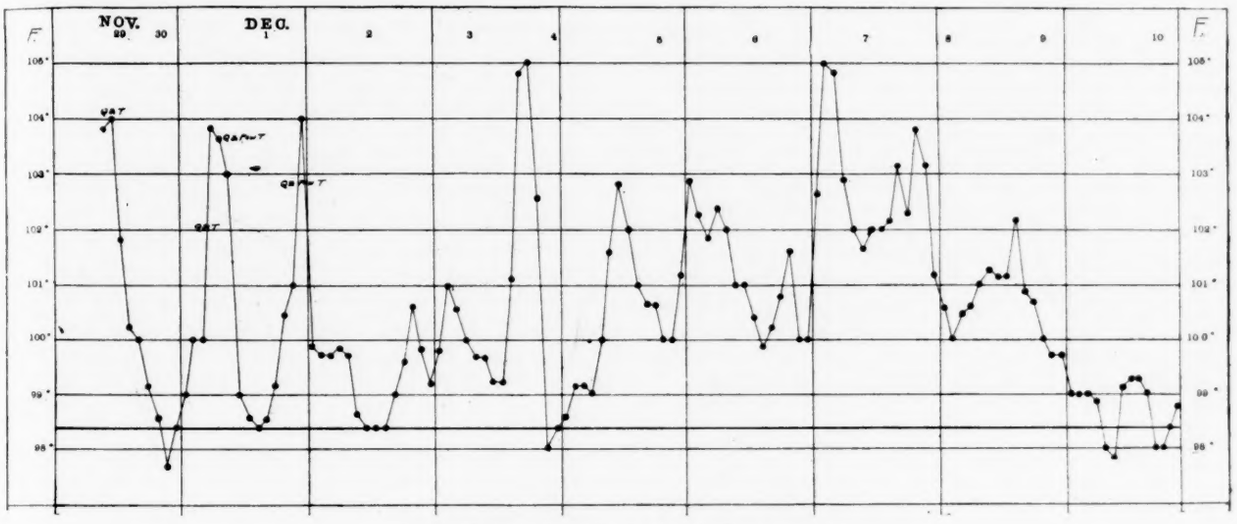

Fig. 3.—Temperature chart of patient in Case 8.

For six months his condition remained unchanged. At this time his mental condition became much exaggerated and there was added to the previous symptoms utter indifference to everything. His bowels and bladder would be emptied in bed and the patient was utterly indifferent to his filthy condition. There was marked muscular weakness. Speech was slow and somewhat hesitating. There was some tremor present. The reflexes were rather sluggish. Pupils reacted to light and accommodation. The tests showed an absence of temperature sense and a great impairment of tactile sense. For the greater portion of the time the patient remained quietly in bed. On the back of each hand was present a spot of exfoliating skin. These two spots were symmetrical in position, shape and size. The process was practically over at this time. The patient told me that during the preceding month he had had several chills, for which he had taken quinin. This was nine months after beginning of his affection. About three months later, Oct. 27, 1905, he was admitted to the James Walker Memorial Hospital, Wilmington, N. C. At this time the whole of the posterior surfaces of both hands were affected with a dry exfoliative lesion extending from the tips of the fingers to two inches above the wrist joints and the lines of demarcation were perfectly symmetrical in position and direction (Fig.

7. Monro (T. K.): Raynaud's Disease, Glasgow, James Maclehose & Sons.

8. Case of Spontaneous Gangrene of Toes in a Child, St. Thomas' Hos. Reports, 1882. xii. (Quoted by Monro.)

9. De la gangrène symétrique des extrémités dans la fièvre typhoïde, Union Méd., 1880, xxix. (Quoted by Monro).

1). The finger tips were considerably atrophic, corresponding in this regard to the classical description of Raynaud's disease. The lesions were painless. On the external surface of the right leg, involving the lower third of the lower leg and the external surface of the foot, was a large moist ulcerative area penetrating to the muscle (Fig. 2). On the left leg was a much smaller area of the dry exfoliative variety. This leg manifested at times the appearance of a local syncope, becoming cold and apparently bloodless, and again it would become cyanotic. As the chart shows (Fig. 3), the temperature at this time and for a period certainly of three weeks, never rose above 99.6 F. There was an absence of chills. The heart, lungs, kidneys and liver were negative on examination. There was a simple secondary anemia and no leucocytosis. There was nothing suggestive of malaria, and yet during these three weeks the blood was loaded with tertian parasites in all stages of development. According to Craig the latent malaria is often characterized by organisms in all stages. Latent malaria in the southern states is practically unknown. In the routine examination of the blood for malarial parasites this is the only case found out of several hundred examinations. In spite of the presence of the parasites in the blood the temperature remained practically normal and the lesions progressed favorably.

November 29 the temperature rose without any preceding evidence of a chill to 104 F. The blood at this time contained numerous quartan parasites and also some tertian, though the former predominated. The blood was examined every two hours and no quinin given. Two hours after the rise of temperature the blood contained many large non-pigmented tertian parasites and only a few young quartans. Two hours later, or at 8 p. m., both varieties were abundant, but the quartan probably predominated. At 10 p. m. the number of tertians was small. At 12, midnight, the number of each variety was about the same. At 4:30 p. m., or 24 hours after the first high temperature rise, there were found full-grown tertian and quartan parasites. At 6:30 p. m. the temperature reached the second high point(103.8 F.). At this time the number of quartans was large and only a few tertians could be found. At 2:30 a. m. there was only an occasional quartan and a considerable number of tertians. At this time the temperature was normal. At 2:30 p. m. the temperature was rising for the third consecutive day, and the blood showed abundant quartan and relatively few tertian parasites. It is evident by comparing the blood findings with the chart that these three rises occurred at a time when the quartan organisms predominated. If these were due to the activity of the quartan parasites there must have been present three different broods of organism. The chart shows after the third rise of temperature an interval of moderate temperature, with a rise on the fourth day to 105 F. This would indicate a single quartan infection. Following this rise is another interval of irregular temperature, ranging from 100 to 103 F, with a rise on the fifth day again to 105 F.

At this point quinin was given hypodermically. The response was prompt and the patient was then given iron and arsenic. For a period of 40 days there was no fever, no skin lesions, and a decided improvement in the mental condition. After this interval of normal or sub-normal temperature the patient suffered a relapse. It was my misfortune to have been away at the time, but I returned in time to secure an autopsy which confirmed the idea of a relapse, as the vessels of the brain, liver and spleen were filled with parasites and pigment. I was able to find only the quartan parasites. Unfortunately, the specimens were all preserved in formalin, which interfered seriously with the histologic study.

To refer to the first febrile period there was seldom a time when the blood was entirely free from tertian parasites, and yet the quartan parasites were undoubtedly responsible for the high temperature. Thayer[10] says that "the clinical manifestations in combined infections are dependent on the one or the other variety of parasites and a complicated fever chart resulting from the combined action of both organisms is extremely rare." The tertian organisms seemed to play as small a part in the production of fever as they did before the appearance of the quartan parasites. In fact, the tertian element seemed to be latent throughout and the chart was apparently shaped by the quartan activity entirely. Di Mattei made the observation that if a malarial subject is inoculated with the blood of a patient suffering from another type of malaria the old infection gives way to the new. His experimentation was done on a patient suffering with quartan malaria and the inoculated organisms were estivo-autumnal. This observation hardly holds in the case in question, as the original tertian organisms remained present throughout the quartan activity.

According to Di Mattei, R. Koch and Ruge, there is in the blood a conflict between the different types of malaria. Why they can not live together is a question. W. Schewiakoff[11] says that between the protozoa there is a constant battle for existence and such a state may be assumed between the different kinds of malarial parasites. Marc[12] is inclined to think that in a question of comparison the tertian is better adapted than the quartan because of its more rapid reproduction, and that the latter is supplanted by a hyperproduction of the tertian. This idea is not carried out in this case, because the tertian was present before the appearance of the quartan and the tendency was rather for the quartan to supplant the tertian. So far there is no satisfactory explanation.

The co-existence of tertian and quartan malaria is very unusual, and so far I have been unable to find any record in the literature of any cases in this country. Golgi, in 1889, first mentioned the subject and reported a case in which the quartan parasites were first found. There were present three generations, and for ten days there was a daily paroxysm. Later tertian organisms appeared in the blood producing a condition independent of the quartan. In 1890 P. Canalis mentioned the combination of tertian and quartan. In 1895 Vincenzi reported two cases of the combined infection. One of these cases was a woman, 48 years old, who had had malaria for four years. This case showed the influence of both varieties of organisms on the temperature chart differing somewhat from my case, in which the tertian played no part in the febrile movement. The most complete description of a case of the combined infection is by Marc. The case was found in Turkestan. The chart in this case differs materially from the chart of my case. In three temperature rises the quartan organisms were found, while in three others the tertian, and between these two was a rise with blood findings showing the presence of both varieties. Marc says that "when one takes into consideration that the quartan parasites complete their development in the peripheral blood principally and the tertian in the internal organs (Mannaberg), it is clear that the disappearance of the quartan from the peripheral blood was no accident: they were supplanted by the tertian." Again, in our case we have the reverse condition.

As to whether or not the mental condition in this patient can be ascribed to malaria is a question. His mental symptoms appeared after a fever that we can reasonably assume to have been malarial. I am indebted

10. Lectures on the Malarial Fevers, 1897, D. Appleton & Co., New York, and in Allbutt and Rolleston's System of Medicine, 1907.

11. Zur Protozaenbiol. Memorien der Akademie der Wissenschaften,' St. Petersburg, 1894. lxxv, Beilage Nr. I Russisch.

12. Die Malaria im Tukestan, parasitologisch Klinisch Studien, Zeitschr f. Hyg. u. Infectionskrankh., Leipzig, 1903, xlv.

to Dr. H. A. Cotton, of the Danvers Insane Hospital, for the report on the brain. Unfortunately the whole brain and cord had been hardened and preserved in formalin. Dr. Cotton says:

I was able to get a fairly good stain, enough to make a diagnosis, or, rather, no diagnosis, as the cortex showed no reaction that could be considered pathologic. The topography was unaltered and the elements of the cortex were not affected by the malarial infection. There was probably an excess of pigment in the nerve cells, which could be accounted for by the patient's age. The blood vessels appeared a trifle thickened, but the fixed cells did not seem altered or to have proliferated at all and the vessels were not increased in number. There was no evidence of general paralysis or other organic affection and no evidence of cerebral syphilis. The parasites were very easily seen in the blood stream and in great numbers. The parasites were of the quartan type. There was nothing of note in the cord and peripheral nerves.

Ascoli has shown that in malarial cachectic patients there may be symptoms simulating those of chronic alcoholism with listlessness, loss of memory, the apathetic condition, tremor and slow, uncertain speech. Thayer[10] says: "The psychical phenomena are usually of a confusional type with a tendency toward hallucinatory delirium. Slow, hesitating speech, marked muscular weakness, or sometimes increased muscular excitability, with exaggerated reflexes, are common." This patient manifested many of these symptoms, but he could scarcely have been considered a malarial cachectic when the psychic disturbance appeared. Certainly the mental condition improved under quinin treatment. Cardamentis thinks that psychic disturbances are not due to the action of the parasites, but of the toxins, and that individuals of a neurotic taint are predisposed. Pasamik[13] found among 5,412 malarial subjects 106 cases with psychosis. All were cases of depression and lasted from four days to three months, except one case of persistent dementia. In none of these cases was there present a hereditary influence.

Marandon de Montyl[14] reported 27 cases of malaria causing brain disturbances. He stated that these disturbances occurred more in acute than in chronic cases and that the prognosis was not so good as is usually supposed. Further, he stated that malaria produced no specific psychosis, but merely played the part of a provocative agent.

CONCLUSIONS.

1. Malaria may be considered a direct or a provocative agent of symmetrical gangrene of the skin. The skin lesion differs somewhat from the classical description of Raynaud.

2. Tertian and quartan malaria may occur simultaneously, but such a combination is exceedingly rare. Usually one type predominates.

3. Latent tertian fever occurred in Case 8. It is very unusual.

4. Certain peculiar psychoses may be present in malaria and are probably of toxic origin. This question should engage the attention of the psychiatrists in malarial districts or those having patients from these districts.

DISCUSSION.

DR. GEORGE DOCK, Ann Arbor, said that in malaria, as he pointed out in 1894, the blood circulation is not uniform; the parasites gather at certain parts of the circulatory network. Further observations should be made in such cases by studying the blood from different parts of the body, not only in the extremities, but from the ear or the spleen, for the purpose of seeing how and where the parasites and leucocytes are distributed. In Dr. Dock's article, read before this Section in 1890, he described the findings in cases of latent malaria. The clinical symptoms were those of a low grade of infection of some kind and the blood showed certain parasites with a more irregular mode of development than those found in typical intermittent fever.

DR. W. S. THAYER, Baltimore, said that he had had the privilege of examining Dr. Wood's specimens. He emphasized the importance of the observations of Dr. Wood as to the frequency of symmetrical gangrene in malaria.

DR. JAMES B. HERRICK, Chicago, said that in further investigations along this line it is not only advisable to take the blood during life from different parts of the body, as suggested by Dr. Dock, but every opportunity for postmortem examination should be seized and most careful studies should be made of the changes within the vessels as well as in the vessel wall, to see if there is any blocking of the vessels with corpuscles infected with plasmodia. Apparently something of this sort was found in this case. Not only should the vessels near the seat of the lesion in the skin be studied, but the vessels of the central nervous system might show some change if careful examination were made.

13. Ueber Malaria Psychosen: Wien. med. Wochschr., 1897.
14. Rev. de Méd., 1903.

THE SLEEPING CANOPY: AND THE NEED OF SUCH MEANS OF VENTILATION.*

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DENVER.

The object of experimenting with bed canopies has been to devise a substitute for the sleeping tent which can easily and cheaply be made, by the invalid himself if need be, and which will furnish practically out-door sleeping, yet in a warmed house or bedroom.

The invalid may thus, tentatively, inure himself to more and more air; the window may be partly or wholly opened. The sleeper when he arises in the morning, or if he has to get up at night, comes from his tent into a warm room. If economy in room space is a desideratum the canopy when not in use can be pulled up by its frame to overlay the casing of the window and there remain until it is again needed. If the bright sunshine in the morning needs to be shut out so as to prevent waking the sleeper, or greater privacy from the neighbors is desired, or if the invalid wants to have the great advantage of sun baths, with or without oil rubbings, at suitable times during the day, a dark window shade may be provided to unroll from the near window sill to stop at any height desired. The canopy curtains can be made large and long enough to encircle the exposed sides of the bed, reaching to the floor and in front be buttoned or be fastened to each other with hooks and eyes or safety pins; they can also be tucked under the mattress so as to shut out all violent drafts or wind.

The curtains are tacked to the outer rim of the inside window casing, under and close to which the bed is moved either parallel to the window sill or head on, as shown in the accompanying pictures. The two illustrations (Figs. 1 and 2) of the head-on method show here how easily the arrangement can be made to fit a four-foot wide window frame and reach over and partly enclose an ordinary single brass bedstead forty-one to forty-two inches wide. For double beds or wider windows its dimensions will require but little changing. Such an ordinary window, say three feet

* Read before the annual meeting of the American Climatological Association in Washington, D. C., May 8, 1907.

wide, when only half closed, with the sleeper so near the opening, will give as much as, or more, ventilation than a tent with one-half the front fly thrown back, and if a storm or wind comes up the ventilation, if excessive, can be regulated to suit. It may thus serve as an educator or coaxer to induce invalids to appreciate and like out-door sleeping.

The freshness of the out-door air is almost as apparent as when sleeping on an open porch, so near to the occupant's face is the ever-changing atmosphere. The same exhilaration is felt on awakening in the morning as when arising from a cot in an open tent.

WHY OUT-DOOR SLEEPING IS NOT POPULAR.

Why is not out-door sleeping more popular? Why should not a delicate person, an invalid or convalescent take kindly to and adopt such a provision for his or her sleeping hours? Two reasons suggest themselves: 1, Because of the unreasonable or exaggerated fear of a draft; 2, ignorance of its suitableness for his special needs.

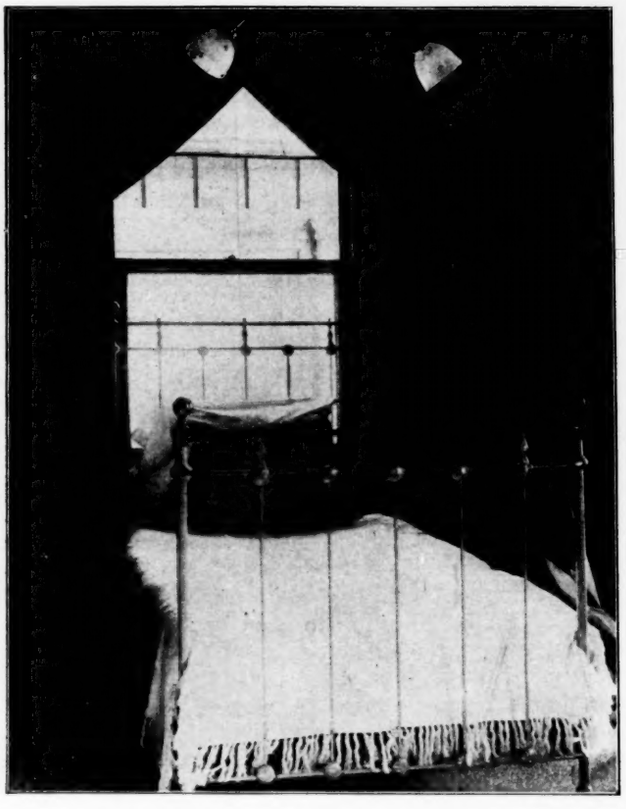

Fig. 1.—The sleeping canopy showing curtains thrown back from over the head of the bed to show iron frame in position and top sash of window down.

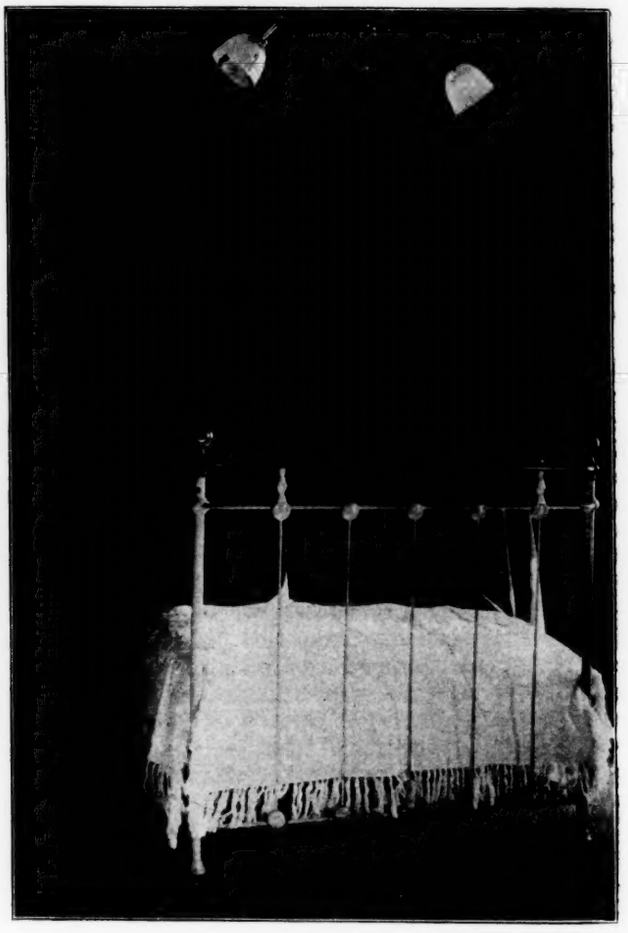

Fig. 2.—The sleeping canopy showing curtains closed in over head of bed, as when in use at night.

First, as to the question of draft. It is not the draft element, the same as I think it is not the germ cause in tuberculosis, we ought to think about so much as it is the susceptibility of the individual. A camper in the Rocky Mountains can get so inured to the drafty air that he can sleep on the ground with the wind blowing twenty or forty miles an hour and not think of "catching cold." The habit of exposure at night in a room with the windows all open has many times stopped night sweats which drug remedies alone had not been able to control. So here a sleeper, by having warm enough coverings on the bed and a thick woolen hood on the head in winter, or a light soft nightcap in mild weather, can so temper the air movement (for one will, of course, feel it coming down on his face) that no danger of "catching cold" will result.

As to the second reason, lack of appreciation or ignorance. We ought to have a rule of space per capita for sleeping purposes that would be so advocated and enforced (by legal enactment if necessary) that no one could plead ignorance, or be charged with it, as an excuse for inappreciation of the relation of air space to health. This rule should, of course, carry with it the condition of more frequent renewal as a compensation or compromise for lessened space. For instance, if Parke's conclusions ("Practical Hygiene") in favor of "3,000 cubic feet space for each person, renewed once every hour" be taken as the rule, then a sleeping-room with one-tenth that space should be renewed ten times as often. The sleeping canopy with one-thirtieth that space, namely, about 100 cubic feet, roughly estimated, should have a renewal capacity thirty times as often, or once in two minutes. It probably exceeds twenty times this, or once in five seconds, and is surely on the safe side of the strictest rule for health that even the most exacting would suggest.

This question of the necessity of sufficient air space, especially during the probably more susceptible sleeping hours, is, in my judgment, the most vital one to consider in connection with the present tuberculosis crusade, not second in preventive importance to the quality of air in that space, nor to the infective germ of tuberculosis. I believe it is a mistake to hold (as was done in a recent discussion of the question) that tuber-

losis is a "house disease" simply because of the con-ntration (i. e., the increased opportunity for infec-on) of germs therein, rather than because of the amped and limited air supply. If this germ explana-on is to prevail, there will be small hope of eliminat-ng tuberculosis with all the restricted measures you an muster. There is a natural, perhaps I ought to say et undiscovered, law of ventilation which will then con-nue to be broken. There is limitation to lessened air space in sleeping and living rooms, beyond which un-healthfulness commences, and this will remain un-changed. Tuberculosis is the outgrowth of this faulty environment, and on this *post hoc* microbic explanation of its house relation the disease will continue to thrive. We might as well try to eradicate the mold and moss from a Louisiana swamp jungle, without letting the sunlight and plenty of dry air in there, as to try to pre-

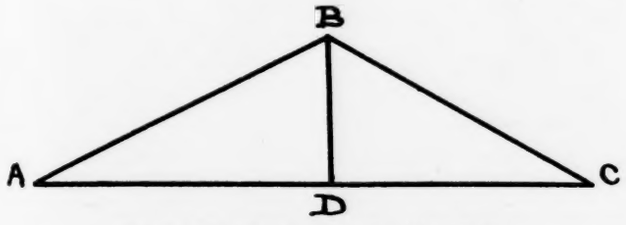

Fig. 3.—Showing method of cutting cloth.

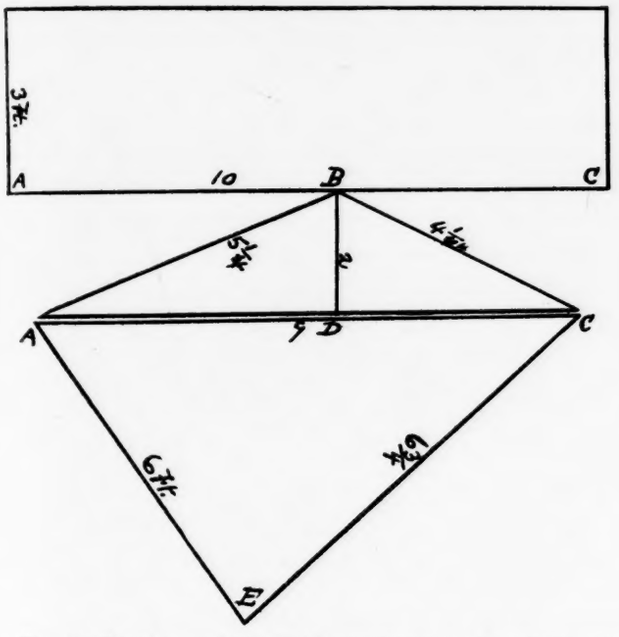

Fig. 4.—Showing method of and measurements for cutting cloth for canopy.

vent tuberculosis without changing the environment of its origination. I am, therefore, opposed to this germ explanation, this prevailing disinfectant idea, as the sole battle cry against tuberculosis, because it is wrong. It is misleading, luring us away from knowing the value of perfect ventilation.

I will try to describe this canopy so that any one, by following these directions, can make it to suit his own individual conditions.

DIRECTIONS FOR MAKING THE TENT.

As to material, yard-wide denim, because it is closely enough woven to stop the wind, resembling tent cloth or duck in this respect, and because it comes in various colors and designs, has seemed to me the preferable material. Besides, it is less expensive than good duck cloth. In determining the amount of cloth needed, from one to two feet (according to the width of the bed and the height of the top of the window frame) should be added to the distance from the top of the window casing down to the floor, and let this sum be the length of the front facing of each curtain. Supposing the height of the window casing from the floor is eight and one-half feet and the width of the window casing four feet, then the height of the wire frame is five and one-half feet and width four feet, the two front pieces of the curtains being ten feet long and three feet wide. Cut out two strips as follows (Fig. 3) and ABC is equal to ten feet, ADC being a straight edge and BD being three or four inches more than one-half the distance of the wire frame from the wall. This makes BD, say, two feet and AC nine feet, AB representing the height of the frame from the floor, C will come to the top of the canopy. Sew ABC to outer edge of each front ten-

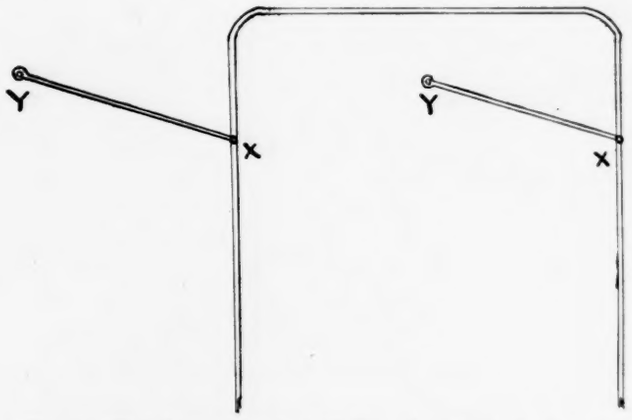

Fig. 5.—Wire frame hinged at X X, and perforated for screws at Y Y.

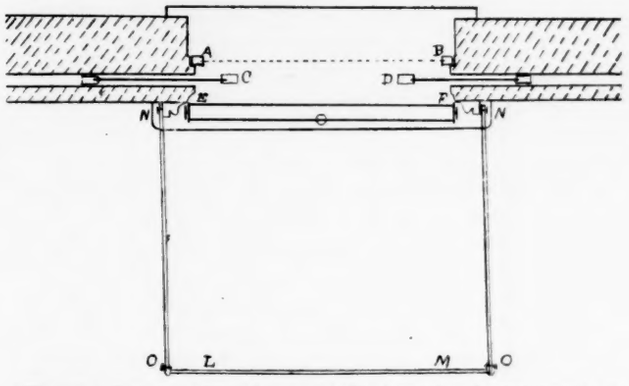

Fig. 6.—Cross-section of suggested plans for improvements in window openings, looking down on window sill. A B screen outside window. C D, window sash sliding on rollers into wall. E F window shade roller fastened to window sill. L M, arched wire frame to support the canopy, hinged at N and O to slide rods extending over the bed.

foot strip and to ADC sew a triangular strip ACE (Fig. 4) made of half a rectangle, the hypotenuse of the triangular half of which is equal in length to ADC and the ends of which rectangle are two and one-half feet more than the width of the bed. This enables the curtain to reach around the mattress and lap over the opposite curtain in front when the bed is placed parallel to the window sill. This will make the square mentioned six by six and three-fourths feet, which is to be cut through diagonally from corner to corner the long way. Then we have the three pieces illustrated of which to make each curtain. About where needed in this curtain there

will be a bulge or pocket for the corner of the supporting frame.

Allowances can be made for seams and hems, as well as for wider, narrower or taller window casings, and as well as for a double bed.[1]

As a cheap substitute for the wire supporting frame used in these illustrations a frame can be made of inch square pine slats, say, five and one-half feet tall and separated about four feet by a cross slat at the top and this frame held out parallel to the window by two thin slats loosely screwed at their ends to the sides of the window casing. A much better plan, however, is to have a blacksmith or a wire-screen firm make a frame like that shown in the illustration (Fig. 5), namely, of five-sixteenths-inch iron rods, taking about fifteen feet for a four-foot-wide window frame. The side arms, of same sized wire, to be, say, two inches longer than the bed is wide. These are hinged on the wire uprights near their curved tops and flattened for the reception of a screw when fastened to the outside jamb of the window casing.

This form of awning is not expensive. It can be made for from six to twelve dollars, according to the size and kind of material used. It is recommended because of its simplicity and its adjustability to the varying house and weather conditions which obtain in every invalid's home. It may find a place among the many other substitutes proposed for out-door sleeping tents, and especially the "window tent" of Dr. S. A. Knopf, described with others in his excellent paper read before the

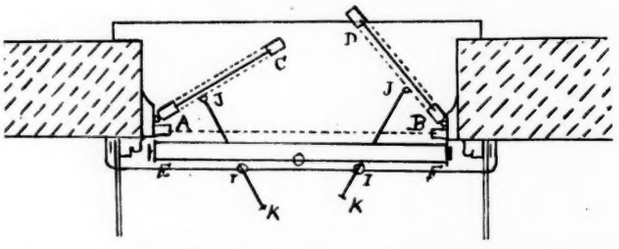

Fig. 7.—Cross-section of plan for windows hinged to open outward. J K, sliding rods through pivoted stops (I I) to hold windows (C D), in place.

National Association for the Study and Prevention of Tuberculosis, at Washington in May, 1905.

In closing, I wish to suggest what appears to me an ideal arrangement for such a sleeping canopy as this, to be incorporated into the building plan of a house (Figs. 6 and 7). The plan is suggested with the belief that something of the kind ought to be quite generally used in hospitals, dormitories, tenements and homes, since this principle of spending all the sleeping hours practically in the open air probably affords the best adaptable means of preventing, not to say curing, tuberculosis. The architect's plan should either represent his own intelligent forethought or the owner's demand for adequate ventilating possibilities; then such complete ventilation as is here sought can always be easily and cheaply provided. It will not be very much more expensive to substitute this possible wide-open window method, shown in the diagrams (Figs. 6 and 7) for the ordinary sash plan everywhere in vogue.

1. If one does not mind about the curtains not fitting the frame exactly, the making of the sides (after the front lengths are cut off) can be very easily done by next making a square, the hypotenuse of the triangular half of which equals the length of a front piece. Sew the long sides of these two halves to the sides of the front lengths to make the two curtains.

AN IMPROVED ABDOMINAL SUBTOTAL HYSTERECTOMY, ESPECIALLY APPLICABLE IN CHRONIC PELVIC INFLAMMATION;

A METHOD GIVING PARTICULAR ATTENTION TO THE RESTORATION OF LIGAMENTARY SUPPORTS.

WILLIAM F. METCALF, M.D.
DETROIT.

It is not my intention to bring up for discussion the relative merits of the so-called conservative and radical methods of treating chronic inflammatory conditions of the uterus and its adnexa. I frequently remove one

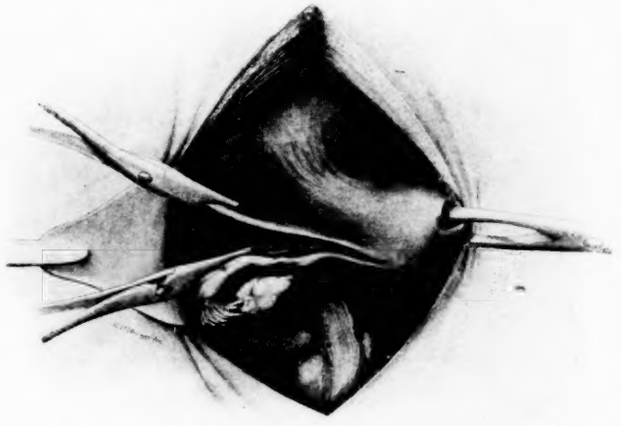

Fig. 1.—Adhesions having been separated, the uterus is lifted upward into or toward the abdominal wound and pulled to one side, making taut the ligaments of the opposite side. Forceps on the infundibular and round ligaments.

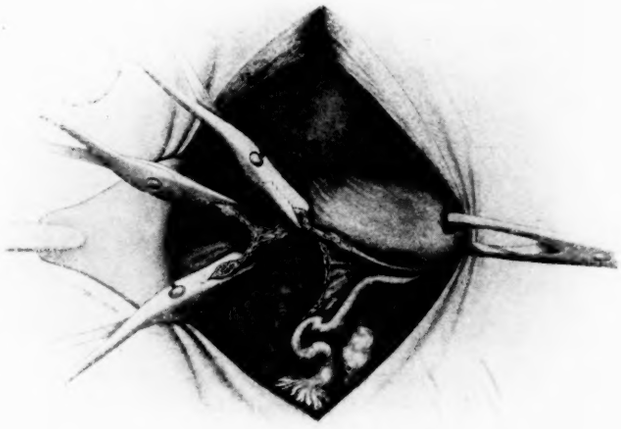

Fig. 2. Line of incision through infundibular, round and broad ligaments to the side of the uterus at a point of junction of cervix with corpus.

tube and ovary or one ovary and both tubes or leave only a portion of one ovary, in order that menstrual life may be prolonged. In some of these cases I get good results. In others, continued invalidism, denoting error of judgment on my part, compels the patient eventually to submit to the more radical operation.

In cases of chronic gonorrheal pyosalpinx, Schauta, Doederlein, Hegar, Fritsch, Martin, Winter, Landau

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-eighth Annual Session, June, 1907.

and others, as well as many American surgeons, among whom are Bovée, Kelly, Shoemaker, Mann and Van der Veer, have all expressed themselves in favor of the radical procedure. According to Noble's statistics, the removal of only the tubes and ovaries in such cases is more dangerous than total extirpation. In various other conditions in the pelvis there may not be the same unanimity regarding treatment, and in many, as I have already indicated, there may be opportunity for the exercise

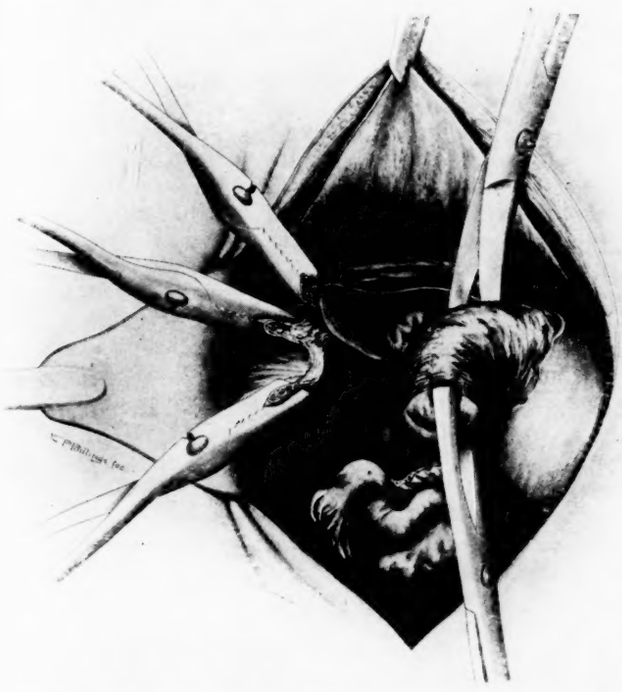

Fig. 3.—Forceps on peritoneal flap separated from anterior surface of uterus, holding bladder forward and ureters further away from uterine vessels. Incision extended through the lateral cervical musculature into vagina, also through anterior cervical musculature and posteriorly through the vaginal wall. The fundus uteri replaced in the abdomen and the vaginal cervix lifted toward the abdominal incision. Where there is much discharge it is covered by a gauze sponge which is held in place by the grasping vulsellum.

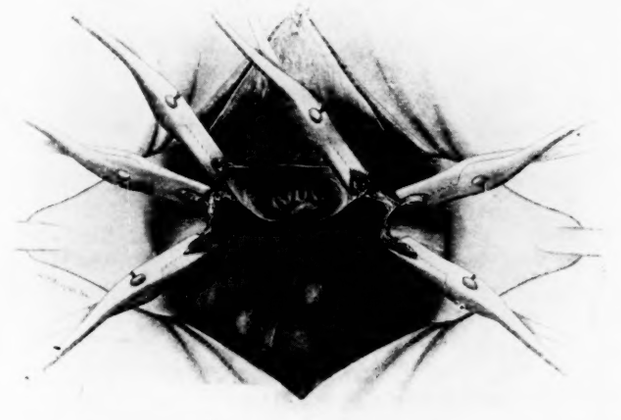

Fig. 4.—The uterus and its appendages are removed, the incision being extended in opposite directions through the ligaments. The lateral strips of cervical muscle united by the fibers from the anterior surface of the lower cervix. Gauze in the vagina.

of a limited conservatism, especially as affecting the ovaries, but for present purposes I wish only to consider the best method of removing the organs when it has been decided to sacrifice the ovaries.

The development of hysterectomy proceeded in the direction of lessening the cervical remnant until it was maintained that there was little added danger in complete removal. Any risk involved in the more complicated vascular arrangement at the lower point of section was believed to be compensated by the improved drainage afforded, and latterly it has come to be recognized that the stump of cervix may itself be a harbor for more or less dangerous infection.

A supravaginal hysterectomy for fibroid of the uterus was done as long ago as 1843 by Heath, an English surgeon, but he performed it in a crude fashion by tying off, on each side, a half of the cervix and the broad ligament of the same side *en masse*.[1] Bellinger (1846), after removal of a uterus with fibroid, picked up the bleeding vessels separately and tied them with animal ligatures. Burnham (1853) purposely sought and tied the uterine vessels. These men had all amputated the uterus directly through the cervix at its upper portion. Clay (1863) threw a triple ligature about the cervix low down and cut across above this ligature. Koeberle effected the "low amputation" of the cervix by the application of a serre-nœud, the ends of the wire being

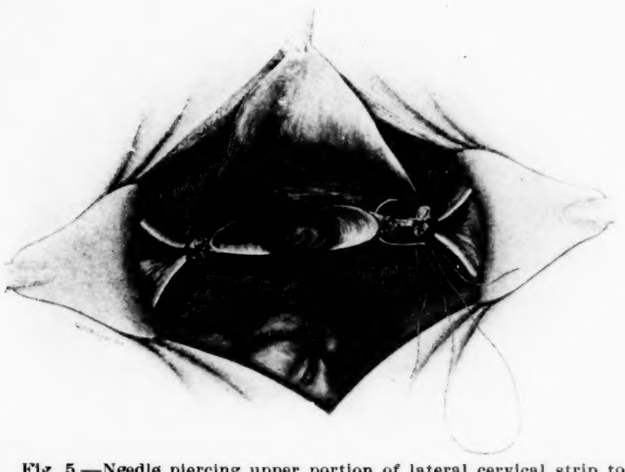

Fig. 5.—Needle piercing upper portion of lateral cervical strip to surround uterine vessels with suture and draw this point upward and outward to the fixation point at the pelvic brim, previously established by the union of the cut ends of the infundibular and round ligaments. Completion of the ligating process is shown on the opposite side.

brought up out of the abdominal wound. Pean developed this idea by bringing the stump of the cervix up and fastening it into the abdominal wound, a practice which remained in vogue for twenty years. Mikulicz (1878) applied a temporary ligature to the broad ligament *en masse* and followed this by isolated ligature of the uterine vessels.

To Schroeder (1879 and 1881) we owe the placing of supravaginal hysterectomy on a basis more nearly perfect. He recommended separate ligatures on uterine and ovarian vessels and round ligaments. He also first suggested closing the cervical canal from above by suturing over it two small flaps of cervical muscular tissue, and finally he covered this over with peritoneal flaps so as further to protect the abdominal cavity from infection. The operation, in this stage of its development, has been improperly ascribed to Emmet, who gave Schroeder all the credit for these improvements.

Two things in this operation as ordinarily done have

1. Jayle: Rev. de Gynec., Paris, 1904, No. 1.

seemed to me faulty, and it is in these particulars that I will aim to demonstrate the possibility of its improvement. First, the portion of cervix left, even after "low amputation," so long as the incision does not reach the vagina, must contain a sinus of varying depth, and leading from this sinus are crypts in the form of branching glands which harbor infection; and, second, there is failure to give the remaining pelvic organs, especially the bladder, their best support possible.

The former criticism has been recognized by different operators who have aimed to meet it by cauterizing the cervical canal. In some cases, infection from this source may reach the iliac glands which, although they may not suppurate, may yet remain enlarged and tender, prolonging the convalescence to several months. In 1903 Pichevin reported a case in point in which a "metro-abdominal fistula" remained after supravaginal hysterectomy, as a result of infection from the cervical stump, until the latter was removed from the vaginal vault. He admits the reflection which this case throws on the operation as it is ordinarily performed, but at the same time failed to offer any adequate remedy. In later writing on this point,[2] he describes the method which he has adopted as follows:

A muff of conical form is cut out of the uterine stump by means of a bistoury. The center is formed by the cervical canal and the muff itself is cut from the parenchyma. The cervical mucosa and a part of the musculature are thus removed through a great portion of their extent, down about as far as the external orifice.

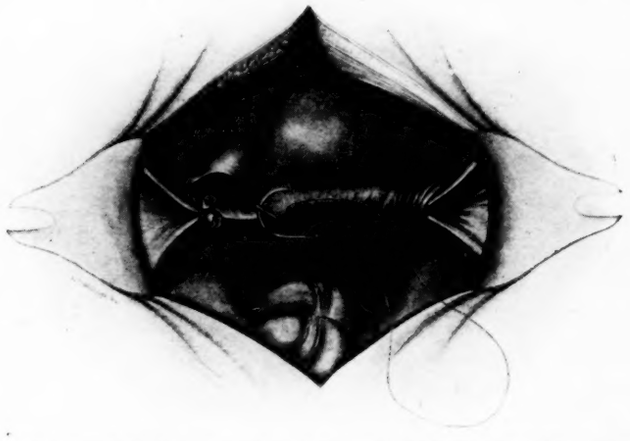

Fig. 6.—Suturing of peritoneal flap attached to the bladder over the hammock support; the needle is passing through the end of the uterosacral ligament.

In speaking of supravaginal hysterectomy, Kelly[3] says:

In order to make the drainage effective it is best to cut down through the cervical ring in the median line posteriorly so as to open the ring widely and give a large avenue of exit at this point.

This measure might prevent the accumulation of blood in the cul-de-sac, but would not give the most perfect drainage of the cervical perimetrium, a consideration of some moment, since it is here that much of the infiltration about the cervix can be shown to accumulate.

Bland-Sutton[4] says:

The careful study of the subsequent course of patients after supravaginal hysterectomy has led observant operators to notice that those cases did best in which the supravaginal cervix had been most freely removed.

2. Rev. pratique d'obst. et de gynec., Paris, January, 1905.
3. Operative Gynecology, ii, 268.
4. Lancet, London, May 27, 1905.

In the light of an experience of over three hundred hysterectomies, by various methods, for chronic pelvic inflammation, I wish to advance the opinion that the cervical mucosa should be removed entirely, so that no gland-bearing tissue may remain to harbor and spread infection. The method by which I accomplish this purpose is still a subtotal operation. I have used it as my regular method of abdominal hysterectomy for the past five years and it was developed out of my previous experience. It has been described in previous reports and papers, and I now feel that results justify my presenting it before this Association.

In the study of results, I have included for consideration my vaginal hysterectomies during the corresponding period, believing that my low mortality in the latter operation has been due to the perfect drainage of the pelvic lymphatics, even aside from any definite pus accumulation, and that, as soon as I had recognized this principle in its application to abdominal hysterectomy, my results with the latter operation, all things considered, were as satisfactory as those with the former had been. Of course, being the operation of choice, a somewhat higher percentage of mortality has fallen to the portion of the abdominal in the later years as was the case with the vaginal operation earlier, because the more serious cases naturally were submitted to the operation preferred. More and more pelvic lesions have been approached by the abdominal route because of the opportunity which it affords for the application of a wise conservatism and the facility also given for a careful examination of the abdominal organs.

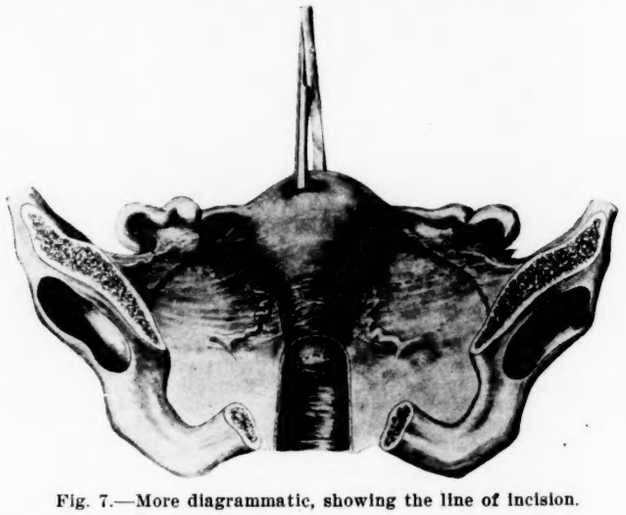

Fig. 7.—More diagrammatic, showing the line of incision.

I can with some assurance state that the operation which I shall describe distinctly meets the second objection that I have raised to the ordinary supravaginal operation, namely, the failure to give the remaining pelvic organs, especially the bladder, their proper support. In order to obtain definite evidence on this point, a standard was sought by which to estimate the efficiency of bladder support attained; and the most satisfactory, as well as the most simple, was found to be a measurement of the distance from the meatus urinarius to the vault of the vagina. My confidence in the results which I report is based on a large number of such measurements, many of them taken years after the hysterectomy.

All the gland-bearing tissue is removed, yet a portion of the cervix is left. I, therefore, speak of this operation as subtotal, a term in use since 1899 and said to

have originated with Longuet. The operation is as easy as the supravaginal in the case of fibroid tumors and is safer in suppurative conditions. The leaving of the lateral strips of cervical musculature is a protection against free bleeding from the vaginal arteries.

TECHNIC OF THE OPERATION.

A thorough cleansing, not only of the skin over the abdomen, but also of the vagina, is of especial importance, since the incision extends into the latter area. Standing on the right of the patient, who has been placed in the Trendelenburg posture, the abdomen is opened by an incision in the median line extending upward from the symphysis pubis. The intestines are freed from adhesions and pressed upward out of the pelvis, being held up and protected by long gauze towels. Other adhesions are then broken or cut and any pus pockets opened are wiped dry.

At this point it may be remarked that, contrary to the experience of Faure, Kelly, Doederlein and Pichevin, who claim that the adnexa are more easily removed after the removal of the uterus, I find that the adhesions about the adnexa are more easily broken up by first attacking those posterior to the uterine body and then, while the uterus may still be utilized as a tractor and guide, by following the lines of cleavage from the uterus outward and upward at either side. The methods advocated by H. A. Kelly and J. L. Faure, of splitting the uterus in hysterectomy, I consider objectionable, inasmuch as by so doing the field of operation is unnecessarily exposed to infection from a large area of uterine mucosa.

The fundus of the uterus is now grasped by a pair of strong double volsellum forceps and drawn partly through the abdominal incision and over toward the operator sufficiently to place the left broad ligament under moderate tension. The left uterine appendage is picked up and the infundibular ligament, containing the ovarian artery, is clamped. Near this another pair of forceps is placed, on the left round ligament (Fig. 1). With a pair of stout scissors, sharp-pointed and curved on the flat, both these ligaments clamped are cut across, and the incision is extended down through the broad ligament to the side of the uterus at the point of junction of the cervix with the corpus uteri (Fig. 2). A crescentic incision, convex upward, is then made through the peritoneum covering the anterior surface of the uterus, sufficiently high, if possible, to afford a flap for covering any raw surfaces left in the field of operation. By this incision the vesico-uterine ligament is cut from its attachment to the uterus. This peritoneal flap, with its subjacent connective tissue, attached to the fundus of the bladder, is peeled up from the surface of the uterus and carries with it the bladder and, at each side, the anterior layer of the broad ligament. When this flap is held forward, it raises the bladder from the uterus and the ureters are lifted away from the uterine vessels, which are now uncovered and exposed to view. These vessels are now clamped on the patient's left and cut.

Resuming now the original lateral incision, the scissors pass downward through the musculature of the cervix until the vagina is opened at the side of the external os. A short, wide strip of gauze is passed into the vagina through this opening to guard against infection from that tract. The incision is then carried downward through the front of the cervix, leaving a semicircular rim of its anterior musculature united by one end to the lateral strip of muscle just separated from the cervix, and by the other end to the lateral strip to be separated from the other side. The volsellum is now loosened from the fundus uteri and made to grasp the cervix in such a manner as to close, if possible, the external os.

The fundus is now replaced in the abdomen and the cervix lifted upward into or toward the abdominal incision (Fig. 3). The cervical incision is then carried through the musculature in the opposite direction, i. e., from the infravaginal toward the supravaginal portion until it leaves the cervix at its junction with the corpus. The uterine vessels are here grasped with artery forceps and cut across. The incision is continued through the broad ligament after the round and infundibular ligaments are clamped as on the opposite side (Fig. 4).

The only cervical tissue left is a thin strip on either side and a narrow band, taken from the anterior surface of the cervix, uniting the lower end of the two lateral strips. The incision has passed through the posterior vaginal wall in separating it from its cervical attachment. If there has been pus in the pelvic cavity, or an extensive raw surface, necessitating the packing of the cavity with gauze, I extend the incision in the median line through the posterior vaginal wall between the uterosacral ligaments to afford better drainage and to insure easy removal of the gauze.

The course of the incision, as has been seen, resembles in a general way that described by Howard Kelly in the supravaginal hysterectomy that he reported in 1896, but in the treatment of the cervix they bear nothing in common. This operation was merely a "low supravaginal" and, in common with others of its type, left much to be desired in inflammatory conditions.

A suture of rather heavy catgut is now passed around the infundibular ligament with its vessels and tied. The round ligament of the same side is caught up and ligated with the same suture. If either of these ligaments is too long to give firm support as a fixation-point, then the ligature is sewed in at a point higher up and the free end of the ligament or ligaments is trimmed off. The uterine vessels or any of their branches in the broad ligament which it may have been necessary to clamp are now encircled with the same ligature-suture and again tied. The same suture now takes up the corresponding side of the cervical remnant and draws the latter into firm fixation with the newly-established point of junction of the round with the infundibular ligament. By this procedure the uterine vessels have been controlled (Fig. 5). If, as sometimes happens, a branch of the anterior vaginal artery on the same side should bleed when the forceps are removed, a separate suture of fine catgut should be used to ligate it.

Exactly the same plan of approximation is employed on the opposite side, the ligature and suture being continued from the lateral wall of the pelvis toward the median line; and it will be seen that the upper ends of the lateral cervical remnants are thus carried upward and outward toward the pelvic brim at either side. The lower ends of these lateral remnants being still united by the band of muscle tissue from the anterior surface of the cervix, we thus have a strip of cervical muscle extending, like a hammock, almost horizontally across the pelvic strait from side to side. Over this hammock is thrown the peritoneal flap attached to the bladder, the edge of this flap being stitched posterior to the hammock, the sutures passing through the cut ends of the

uterosacral ligaments. Thus the supporting function of all the ligaments is maintained (Fig. 6).

Besides affording normal support to the remaining pelvic organs, the restoration thus effected helps to preserve the normal intra-abdominal pressure. Palmer Findley[5] says: "The uterosacral and uterovesical ligaments play an important part in the action of the diaphragm."

When it is not necessary to place a packing of gauze in the pelvic cavity, the operative area is made entirely extraperitoneal, and the possibility of spontaneous drainage to the vagina is vastly greater than after the ordinary supravaginal operation. If it be desired to pack the pelvic cavity with gauze for drainage and the prevention of intestinal adhesions, the peritoneal flap is simply made to cover the raw surfaces laterally, the center being left open for the removal of the gauze and for drainage. The original abdominal wound, in any event, is closed without drainage.

In this reconstruction of the supporting framework of ligaments within the pelvis, I believe this method offers something not previously accomplished.

* * *

In some of the cases which go to make up this report, the principal pathologic change was in the uterus itself. Although pyosalpinx might not be present, in many cases microscopic examination revealed the products of old inflammation of the tubes corresponding to the changes in the uterus, and the ovaries in such cases rarely failed to show an advanced state of degeneration. I believe, however, the metritis, in such cases, was the main cause of the patient's symptoms. In some of these cases the diagnosis had to be confirmed by exploratory laparotomy before the necessity for the operation could be finally determined or extirpation advised.

Where the uterus is greatly hypertrophied and harder than normal or, in certain cases, where with enlargement it is soft and edematous and there have been profuse or irregular hemorrhages, or profuse purulent discharge without greatly disturbed menstruation; again, where the uterus, though not at present much, if any, larger than would be considered normal, yet has the consistency of a senile uterus, the result of contraction, secondary to previous hypertrophy; when, with any of these conditions, there have been extreme tenderness to pressure and dragging pain in the pelvis, together with various annoying reflex disturbances; in other words, where pronounced organic changes are accompanied by symptoms sufficiently severe to incapacitate the woman and relief does not follow curettement and systemic treatment, I have advised hysterectomy. In the years remote from the menopause, especially where the patient's surroundings are such that she is not immediately dependent on her own efforts for support, I would often advise repeated curettings or other temporizing measures, but I believe the patient, from the first, has a right to know what she may reasonably expect, and choose her course accordingly.

Believing that the value of any technic will be largely determined by the ultimate results of its employment, I have made an especial effort to gather and compile such evidence. I find that in many of these cases more than a year has been required for the slow clearing away of varied symptoms dependent on the organic changes, so that some of my more recent cases, even though compiled as unimproved, may later be classed with the more satisfactory.

5. Am. Jour. Obst., 1905, vol. xlvii.

HYSTERECTOMIES FOR CHRONIC PELVIC INFLAMMATIONS.

GROUP I.—(April 24, 1896, to Dec. 31, 1902):

	Number.	Percentage of deaths.
Abdominal	55	
Recovered	54	
Died (sepsis)	1	1.8
Vaginal	69	
Recovered	67	
Died (acute nephritis, 1; pneumonia, 1)	2	2.9
Total cases	124	
Total deaths	3	2.4

During this period the abdominal operation described was being developed, but the vaginal was considered the operation of choice.

GROUP II.—(Jan. 1, 1903, to April 1, 1907, four and one-fourth years):

	Number.	Percentage of deaths.
Abdominal	142	
Recovered	136	
Died (peritonitis, 2; streptococcic septicemia, 1; internal hemorrhage, 1; acute nephritis, 1; acute dilatation of the heart, 1)	6	4.2
Vaginal	37	
Recovered	37	
Died	0	0.0
Total cases	179	
Total deaths	6	3.34
Total of Groups 1 and 2	303	
Total deaths	9	2.97

During this second period, the abdominal, subtotal hysterectomy described was employed in all except cases especially suitable for the vaginal operation.

CLASSIFICATION OF CASES IN GROUP II.

	Abdominal.	Vaginal.	Total.
Total number of cases	142	37	179
Average age of patients (171)	34	41.4	35.6
Oldest	56	60	
Youngest	18	26	
Married (176)	118	34	152
Single (176)	21	3	24
Patients having borne children (169)	83	32	115
Patients having borne no children (169)	50	4	54
Miscarriage, history of, (165)*	58	15	73
Puerperal sepsis, history of, (161)*	34	14	48
Gonorrhea, history of, (159)*	48	4	52
Patients having had previous operations by other surgeons			40
Patients having had previous operations by myself			30

*These estimates, based on the histories given by the patients, must be taken as low. In this connection the following further analysis of the evidence is interesting:

	Abdominal.	Vaginal.	Total.
Number of patients denying either gonorrhea or puerperal sepsis (167)	62	17	79
Number admitting both (167)	11	0	11
Number admitting only gonorrhea (167)	37	4	41
Number admitting only puerperal sepsis (167)	22	14	36

OTHER OPERATIONS COMBINED WITH HYSTERECTOMIES IN GROUP II.

	Abdominal.	Vaginal.	Total.
Bilateral salpingo-oöphorectomy	120	31	151
Unilateral salpingo-oöphorectomy	15	3	18
Appendectomy	38	0	38
Anterior colporrhaphy	0	8	8
Perineorrhaphy	1	11	12
Cholecystostomy	1	0	1
Rectal operations	5	6	11
Nephrorrhaphy	1	0	1

Mortality among patients having operations involving other organs than the uterus and appendages, at same time, 3, a percentage of 4.22.

ULTIMATE RESULTS IN CASES UNDER GROUP II.

	Number.	Per cent.
Number of patients on whom reports of ultimate results were received	147	
Number of patients who remain permanently relieved of symptoms for which operation was done	118	80
Number of patients whose condition is reported improved	21	14.28
Number of patients whose condition is reported not to be improved	8	5.4

Three patients have died from other causes since leaving the hospital.

SYMPTOMS IN GROUP II.

	Number.
Pain elsewhere then in the pelvis	115
Marked frequency of urination	41
Diarrhœa	5
Constipation	57
Other conditions found:	
Neurasthenia	38
Hysteria	4
Melancholia	4
Acute mania	2
Drug habit	2
Tertiary syphilis	3

BLADDER IRRITABILITY IN CASES UNDER GROUP II.

	Number.	Per cent.
Number of patients on whom reports were received	110	
Present after but not before operation	26	23.6
Present before but not after operation	18	16.3
Present neither before nor after operation	55	50
Present both before and after operation	11	10

INFLUENCE ON SEXUAL DESIRE IN CASES UNDER GROUP II.

	Number.	Per cent.
Number of reports received	68	
Patients who experienced no change	50	73.5
Patients who reported increase	7	10.3
Patients who reported loss	6	8.8
Patients who reported decrease	5	7.4

FUNCTIONAL EFFICIENCY OF BLADDER SUPPORTS AS INDICATED BY DISTANCE FROM VAGINAL VAULT TO THE URETHRAL MEATUS.

	Cases.	Inches.
Number of measurements taken	107	
Abdominal cases	92	
Vaginal cases	15	
Average distance in abdominal cases		4.24
Average distance in vaginal cases		4.06
Number in which vagina was shortened:		
Abdominal	1	2.75
Vaginal	1	2.5

INDUCTION OF THE ARTIFICIAL MENOPAUSE IN CASES UNDER GROUP II.

	Number.	Per cent.
Patients on whom reports were received	122	
Patients in whom natural menopause had been previously established	21	
Patients experiencing hot flashes	72	59
Patients exhibiting marked nervous symptoms in addition to hot flashes	18	14.7
Patients showing no symptoms referable to the artificial menopause	36	29.5

PATHOLOGIC FINDINGS.

In the 102 specimens examined microscopically, the following conditions were observed:

1. CERVIX. (84 CASES EXAMINED.)

	Cases.	Per cent.
Squamous cell mucosa about the external os uteri, was found in varying degree, thickened and irregular	28	33.3
(In 3 cases the degree of irregularity suggested the possibility of ultimate malignancy.)		
Erosion about the external os	16	19
Nabothian cysts	24	28.5
Endocervicitis, hyperplastic or interstitial	44	52.3

2. CORPUS UTERI. (95 CASES EXAMINED.)

Endometrium.—Hypertrophy, with edema	8	8.4
Hypertrophy without edema	2	2.1
Subacute interstitial endometritis	3	3.1
Glandular hyperplasia, without excess of interstitial increase	27	29.4
Transitional stages between hyperplasia and chronic interstitial endometritis	24	25.2
Chronic interstitial endometritis	10	1.05
Atrophy, secondary to chronic interstitial endometritis	16	16.8
Atrophy, secondary to removal of uterine appendages at previous operation	2	2.1
Myometrium.—Subacute metritis	4	4.2
Chronic metritis, with edema and muscular hypertrophy	19	20
Chronic metritis, in transition from hypertrophy to sclerosis	27	28.4
Chronic metritis, in more advanced contraction	44	46.3

3. FALLOPIAN TUBES. (77 CASES EXAMINED.)

Uterine Portion.—Thickening, by infiltration, of epithelial folds	9	11.7
Isthmus.—Infiltration of tube-wall by round-cell groups	36	46.7
Connective tissue thickening of plicæ, representing old inflammation, of varying extent	59	76.6
Pyosalpinx	22	28.5

4. OVARY. (82 CASES EXAMINED.)

Cases where at least a few primordial cells were found	53	64.6
Cases where sections showed corpora lutea in which normal degeneration was not progressing	14	17
Cases, with corpora lutea undergoing degeneration	17	20.7
Cases where no primordial cells were found	25	30.5
Cases where the ovary gave the following general picture	56	68.2
Follicular cysts varying in size and number. Hyaline degeneration, in masses and in walls of vessels, both of stroma and cortex. Fibrous thickening of the tunica albuginea and of the cortex itself. Congestion, often to the point of dilating quite large venous sinuses. Besides engorgement and degeneration of thick-walled vessels, an apparent increase in their number in section from increased tortuousness. Corpora lutea, often undegenerated and increasing in size by proliferation of the lutein cells. In some, while degeneration has begun or advanced, absorption is prevented by congestion and consequent extravasation into the cyst thus formed.		
Cases with the following condition	7	8.4
Essentially as above, without infiltration of the ovary itself, although contiguous structures were the seat of extensive round-cell infiltration.		
Cases where the ovary, chiefly in the looser part of the stroma, presented a few areas of infiltrating cells	9	11
Cases presenting macroscopic abscess of the ovary	7	8.4

CASE HISTORIES OF PATIENTS WHO DIED AFTER HYSTERECTOMY, AND REPORTED IN GROUP II.

CASE 1.—Mrs. D., aged 36, married 12 years; never pregnant. Never well; under treatment since a child. Choreiform attacks. Always pain in the pelvis; headache, occipital and vertical; backache, continuous. Pain in right lower abdomen, almost constant. Feet always cold; constipation; "cystitis" for past three weeks; same three years ago. On bimanual examination, the pelvis was found to be the seat of extensive adhesions, involving not only the genitourinary tract, but the walls of the intestines. A bad prognosis was given, but exploratory laparotomy, with probable hysterectomy, advised as the only relief. On Feb. 28, 1903, the abdomen was opened; many firm adhesions were loosened, a process which involved the bowel by a tear, which was promptly repaired. Hysterectomy and double salpingo-oöphorectomy. Appendectomy. Reaction rather slow, but pulse regular and good quality on following morning. Urine, about four ounces in 24 hours; became restless and during evening of 29th her talk was wandering. Urine again four ounces in 24 hours. Elimination by skin could not be effected. During the 30th, stupor and muttering. Very restless. Urine, two ounces; large numbers of granular casts. Died at 8 p. m.

CASE 2.—Mrs. G., aged 39. Married at 24; three children, two miscarriages, last five years ago. Good health until six years ago, after last confinement. Three years ago vaginitis, with frequent urination. Lacerations following childbirth had been repaired seven months before (February, 1904), without material improvement. Examination on September 3 showed extensive pelvic adhesions, pelvic abscess, and double pyosalpinx. On September 12, under ether, a cyst of the left broad ligament and a double pyosalpinx were found. Uterus, tubes, ovaries and bladder were all involved in dense adhesions; intestines likewise. Adhesions were broken up; a tear in the bladder resulting from the difficulty of this process was repaired; hysterectomy and double salpingo-oöphorectomy were performed. Cultures gave a streptococcus from the pus of the tubes. The symptoms of generalized peritonitis developed and she died September 20.

CASE 3.—Miss J., aged 19. One brother had tuberculosis of joints. Patient never well after menstruation developed. Severe dysmenorrhea. Became extremely nervous and apprehensive. On Sept. 29, 1903, I removed the right ovary and vermiform appendix. No benefit. Later her pains became severe and dragging in the renal region, right. Nausea, severe cramping, and inability to urinate. The right kidney under palpation was found to descend to the pelvic brim. Right nephropexy, Feb. 13, 1904. Uterus again curetted. Recovery satisfactory, but dysmenorrhea and headaches continued. She would not recover from the exhaustion due to suffering at one period before another was due. Examination December 5 showed uterus somewhat edematous and the other ovary had become cystic, about size of hen's egg. Right kidney in normal position. As a last resort, in spite of her age, hysterectomy was advised, and was done, with removal of the other tube and ovary, December 9. She was apparently in good condition when last seen eight hours later (8 p. m.). During the night symptoms of internal hemorrhage developed. I was not notified until her death at 8 a. m.

CASE 4.—Miss M., aged 21. Mentally irresponsible for six years. Bladder inflammation for eight months. Dysmenorrhea. Had colicky pain whenever bowels moved; more aggravated of late. Backache; headache, frontal and occipital; pain extending down anterior crural region. Examined first on Feb. 1, 1906, she had a temperature of 101 and pulse of 130. Bimanually, there was found pyosalpinx, metritis, and intestinal adhesions. While the bilateral pyosalpinx seemed of gonorrheal origin, an appendicitis was also suspected. On February 23 right tube was found distended with pus and about 5 cm. in diameter; the left about half as large. Uterus increased one-fourth in size. Ovaries fibrocystic. Firm adhesions of intestines to pelvic viscera; one loop of ileum about 20 cm. long, was doubled on itself and firmly adherent in the cul-de-sac of Douglas. Appendix unusually long and lying in the abscess. Head of cecum adherent and bathed in pus. Hysterectomy with double salpingo-oöphorec-

tomy, after breaking up the numerous adhesions. Appendectomy. Five days later she died of general peritonitis.

At autopsy the abdominal wound was found to have proceeded satisfactorily toward healing. Cultures from various parts of the abdominal cavity showed streptococcus and the colon bacillus. The seat of the appendix was healed, but about 10 or 12 cm. from it was a darkened area 1.5 cm. in diameter. Behind the cecum and firmly closed in by adhesions was an abscess which extended upward some 15 cm. A thin fibrinous exudate was spread generally over the intestines.

CASE 5.—Mrs. R., aged 43. Married at 18; four children, oldest 17, youngest 4. Attack like appendicitis in August, 1906. In October pain began in left ovarian region and has continued since. In October, cystitis, which she had first eight years ago. She has profuse leucorrhea, constipation, and sacral backache. Examination showed a mass at either side of uterus. On opening the abdomen (Jan. 29, 1907), adhesions were so firm that a resection of a portion of ileum, 28 cm. long, was done, rather than risk any effort at repair. The portion removed was covered with adhesions, was twisted, and its lumen was greatly constricted. Appendectomy. Appendix subsequently shown to be seat of chronic inflammation. Hysterectomy with double salpingo-oöphorectomy. Microscopically uterus showed metritis and chronic interstitial endometritis; tubes were chronically thickened, and ovaries showed no primordial cells. She progressed favorably for two days, when symptoms of cardiac dilatation developed and she died four days later. Autopsy was not permitted.

CASE 6.—Mrs. Mc., aged 29. Married 12 years. Father died of cancer of stomach. Patient's menstruation always irregular. First pregnant at 21; miscarried. First child now (Jan. 28, 1907) 6 years old; last child 3 years old. Has had attacks of frequent urination; urine sometimes clear, sometimes thick with pus. Constipation alternating with diarrhea. There was tenderness over abdomen and bimanual examination showed dense pelvic adhesions. The family physician had made a diagnosis of pyonephrosis, which had an apparent confirmation when, with Luys' segregator, a clear urine was obtained from the left side while that from the right was loaded with pus, giving a pure culture of a streptococcus. Cystoscopic examination of the ureteral meatus on either side further showed the pus flowing into the bladder by the right one only. It was thought best to drain the kidney before approaching the pelvic lesions. Exploratory nephrotomy February 12, however, revealed no pus. The exploratory wound did well, and on February 27 an abdominal incision was made. Omentum was found densely adherent to intestine; separation caused slight tear of latter; repaired at once. A mass at the left and above uterus contained the tube and ovary. At the right and lying close against the uterus was the abscess which had evidently broken into and thus had been drained by the right ureter; it enveloped the right tube and ovary. The uterus and the suppurating tubes and ovaries were all removed. Cultures here gave the same streptococcus. Blood-examination gave 26,000 leucocytes, with 70 per cent. of polymorphonuclear cells on February 5; on the 27th, 36,668, with 83 per cent.; on March 2, 49,444, with 97.8 per cent.; on the 4th, 81,468, with 98.8 per cent. From this, on successive days, the count fell thus: 44,500, 97 per cent.; 38,068, 95.3 per cent.; 42,632, 96.75 per cent.; 18,872, 94.6 per cent., the last count being taken on March 8, six hours before her death. Meantime the red cells had fallen to 2,697,000 and the hemoglobin to 40 per cent. She died March 8 of streptococcic septicemia (confirmed by autopsy).[6]

SYNOPSIS.

In the supravaginal hysterectomy the portion of cervix left after even "low amputation," so long as the incision does not reach the vagina, must contain a sinus of varying depth, and leading from this sinus are crypts in the form of branching glands which harbor infection. Drainage of the cervical perimetrium is not established and drainage of the pelvic cavity and of the pelvic lymphatics is not adequate, with the result that the lymphatic glands along the iliac vessels may become so changed in their effort to care for the infection as to prolong convalescence or make necessary subsequent operation for their removal, or they may suppurate.

By this method the cervical mucosa is entirely removed so that no gland-bearing tissue remains; the pelvic cavity and lymphatics are thoroughly drained; the proper support of the remaining pelvic organs is assured, and, therefore, subsequent bladder irritability is less, also more nearly normal intra-abdominal pressure is maintained. It is applicable to practically all cases except those of malignancy.

The microscopic studies show that hypertrophy of the endometrium is accompanied by hypertrophy of the myometrium; that there is a temporary increase of muscle as well as of connective tissue; that, where marked chronic inflammatory changes are observed in the tubes and ovaries and in the myometrium, corresponding changes are found in the mucosa of the cervix and of the corpus uteri; that in this class of cases the ovarian substance is slow of involvement. There may be marked infiltration in the surrounding tissue and yet the ovary remain free. When involvement occurs, the infiltration shows first about the vessels of the stroma. The ovary is protected by a fibrosis of its cortex—a thickening of the tunica albuginea, the condition in many cases preventing the rupture of follicles. In many cases the congestion dependent on these conditions prevents the normal degeneration of corpora lutea, the lutean cells developing to form a new growth.

Abscess is more likely to occur in corpora lutea cysts than in follicular cysts.

I wish here to acknowledge my indebtedness to Dr. Homer E. Safford for his painstaking microscopic studies of tissues removed; to Dr. Herbert W. Hewitt for his indefatigable efforts in collecting and tabulating clinical data, and to Dr. E. P. Billings for the drawings.

6. Besides the above deaths, it should be added that three other deaths, at more or less remote periods after leaving the hospital, have occurred among this series. One was from suicide, one from empyema. Cause of death in third case could not be ascertained.

DISCUSSION

ON PAPERS OF DRS. METCALF, MARCY AND CHASE.*

DR. WALTER B. DORSETT, St. Louis, Mo., referred to a paper he read last September at the meeting of the American Association of Obstetricians and Gynecologists, entitled "The Utilizing of the Round and Broad Ligaments in Supravaginal Hysterectomy." The *raison d'être* for this paper was a very disagreeable enuresis following two vaginal hysterectomies, and in which he attributed the condition to a prolapsus of the broad ligament and a retroversion of the bladder, consequent on the hysterectomy. About three or four months ago Dr. Dorsett had a case in which the ovarian artery slipped away when too great tension had been put on it. He reopened the abdomen and tried to find the artery, but never found it on account of its retraction, and the patient died. Dr. Dorsett then described his technic in such cases. After opening the abdomen, he seizes the broad ligament with a pair of forceps and places around it a loop of No. 2 chromicized catgut threaded in a needle. He then ties the distal end and leaves the needle with the forceps hanging over the abdomen. Next he makes an incision down to the point at which he wants to take off the uterus. Next he makes the usual anterior and posterior flaps, and as he cuts through the round ligament he puts on a pair of forceps, leaving them on until they are wanted. Then, by means of the ligature which was passed through the upper portion of the broad ligament, the ligament is pulled down and fastened in the musculature of the uterus on the opposite side. The anterior and posterior flaps and the round ligament, which are still secured by forceps, are next drawn together and fastened in the uterine neck. Then he brings over the broad ligament and whips it over. The operation is very similar to

* The papers of Drs. Marcy and Chase appeared last week.

that of E. C. Dudley and Charles Mayo, except that Mayo uses a simple purse-string suture.

DR. J. RIDDLE GOFFE, New York City, stated that so far as he could see the only original feature about Dr. Metcalf's operation is that he takes out all of the cervix, except two strips of muscular tissue at either side where the broad ligaments are attached. In regard to other points in the technic, he thought that other methods are quite as good. In the first part of the operation Dr. Goffe puts on his ligatures from the start. In regard to the freeing of the diseased organs, he thought that Dr. Metcalf's method is the same as his own. Instead of taking out the uterus first and the appendages afterward, Dr. Goffe frees the appendages. He can follow down to the bottom of the cul-de-sac and work from below up toward the line of cleavage. He also commences out nearer to the brim of the pelvis than if ligaments are short, because he wants to bring the uppper free border of the broad ligament down to the vagina. He, therefore, estimates length of broad ligament needed to reach down, takes one continuous suture, using that same suture over and over again, in steadily going down the broad ligament where he cuts away the uterus. The broad ligament is puckered up and the free border carried down to the uterine stump. Instead of going across, as Dr. Metcalf does, Dr. Goffe does the same thing at the other side until he gets down to the cervical stump. Dr. Goffe thought that by going down into the cervix and laying it open, as Dr. Metcalf does, there is a source of infection during all the rest of the operation. It takes some little time to get down and leave the strip of glandular structure which Dr. Metcalf described, and it leaves an open surface, and open surfaces below are in danger of infection. Dr. Goffe did not think that Searoeder is entitled to the credit of this method of a free peritoneal flap. As he studied Schroeder's work, Schroeder brought together two flaps of uterine structure covered by peritoneum, but he never made a uterine flap as Metcalf made to cover over the tissues. Dr. Goffe make a flap posteriorly as well as anteriorly to reach out on broad ligament and cover all raw surfaces. He passes the suture first into one flap, then outside, and attaches the flap below. By this method there are no raw surfaces whatsoever extending into the peritoneal cavity, and no danger of infection.

DR. C. L. BONIFIELD, Cincinnati, did not consider it a matter of great importance how a hysterectomy is done by various operators. The vital question is whether or not hysterectomy shall be done for inflammatory disease. In his opinion it is unnecessary. He believes that in abdominal operations, and in any other operations, as little damage as possible should be done to the patient, removing as little of the structures as need be. As to removing the uterus in these inflammatory cases, Dr. Bonifield said that the fact that Dr. Metcalf reports 300 cases of hysterectomy for inflammatory conditions shows that he uses this operation as rather a routine procedure. Dr. Cullen, in speaking of the pathology of endometritis, said that in cases of gonorrheal infection of the tubes, examination months or years afterward showed no disease of the endometrium. That shows that the endometritis does and will get well. The reason given that because of the muscular walls of the uterus, making it perpendicular, the organ drains well, Dr. Bonifield thought a good one. What, he asked, led some operators to believe that there was necessity for removing the uterus in these inflammatory cases? In his opinion, it is that in the early operations for pyosalpinx a ligature was thrown around the tube at this first point, and there was left anywhere from one-half to one inch of tube that was infected at the time of operation. It remained infected afterward and every once in a while it would pour its infection into the uterine cavity and give rise to a new endometritis or a new endocervicitis. Dr. Bonifield has reoperated in such cases, and removed these little stumps of tubes and absolutely cured the patients. So that instead of doing hysterectomy, as the doctor advised, and which he thinks is more dangerous and certainly more tedious, Dr. Bonifield removes all of the tube, even cutting out a wedge-shaped piece from the wall of the uterus in order that the side which will not drain is removed, and, then, by closing the horn of the uterus with some absorbable suture, he gets satisfactory results. In examining these patients months or years afterward he finds that the uterus is healthy and gives no trouble at all.

DR. F. F. LAWRENCE, Columbus, Ohio, stated that the first debatable question is the presupposed idea that drainage is the essential element of good pelvic surgery in a larger number of cases. He thinks that practically every operator has year after year gradually drained a smaller and smaller percentage of his cases. While he is an ardent believer in drainage in proper cases, he does not use drainage once to-day where he used it twenty times seventeen years ago. There is probably not one out of ten of the chronic inflammatory conditions of the tubes and ovaries, he said, in which a hysterectomy would be performed, even by the author of this method, in which the necessity for drainage lies above the point of the original infection. The character of the infection for which the hysterectomy is done lies not on the wall of the uterus, but within the subperitoneal tissue below. Dr. Lawrence was particularly pleased with Dr. Chase's reference to stitch abscess, which he thought, in the great majority of cases, are produced not by infection, but by improper method of suture. He said that we must not lose sight of the part played by traumatism in causing infection, and of the fact that, in the majority of operations, the tissues in the lower part of the abdomen have a normally low vitality and when diseased their vitality is lowered still more. Consequently, a traumatism which is here inimical to good results might be passed by or overcome without serious results in the upper part of the abdomen. A rise of temperature can not be avoided, but, the more we simplify, the less we traumatize; the less foreign material in the way of ligature is introduced, the greater will be the success.

DR. B. F. BAER, Philadelphia, Pa., called attention to the fact that about fifteen years ago there was read before the American Gynecological Society a paper entitled Supravaginal Hysterectomy without Ligature of the Cervix. A year later a supplement to the first paper was presented. These papers may be found in the Society's Transactions for 1892 and 1893. The technic there described was so simple and the result obtained was so unusual that the method was at once adopted here and abroad by all of the best abdominal surgeons; and although thousands of hysterectomies have been performed by this method since that time and with results that had hardly been dreamed of before, it would seem that Dr. Metcalf was unacquainted with that work. There can be nothing simpler and less harmful to the tissues, he said, than ligature of the vessels, either separately or including the broad ligament coverings, severing the ligaments and then amputating the cervix, and closing the raw surfaces by covering with peritoneal folds, which are formed by the stripping down of the peritoneal reflection of the bladder before amputation of the cervix. Particular stress was laid in the description of the technic on the value of leaving the cervical canal absolutely alone. The dilating, cutting, cauterizing and placing of drainage tubes or gauze, which had been invariably done previous to that time, were entirely omitted. Two cardinal features were insisted on, namely, the cervix is left without a ligature, and nothing whatever is done to the cervical canal; drainage in abdominal surgery is a delusion. Leaving a gauze pack to drain or to check hemorrhage is most unsurgical. Gauze does not drain and hemorrhage should be controlled by ligature. The cervical canal, undisturbed, has been found sufficient for any possible drainage or the discharge of a stray ligature. Dr. Baer regards the adoption of the technic described by Dr. Metcalf as a step backward fifteen years. Regarding the use of catgut so strongly urged by Drs. Marcy and Chase, Dr. Baer is still ligating the larger blood vessels with silk. Why, he asked, should he give up a ligature that is generally admitted to be safe for one less so, when he has not had any trouble with silk since he gave up the routine use of a drainage tube?

DR. JOSEPH TABER JOHNSON, Washington, D. C., was absolutely certain, from an experience covering thousands of cases, that silk is not a dangerous material to use for ligating large vessels in the abdominal cavity, and he is also certain that an honest search of the records of hysterectomies done for fibroid tumors will disclose the fact that there are a dozen cases of

infection and death from the use of infected catgut or from the use of catgut that has absorbed or slipped off and allowed hemorrhage to occur, to one where sterile silk was used. For that reason Dr. Johnson is not willing to give up absolutely the use of silk in the abdominal cavity. During a recent discussion on this subject, a number of cases were mentioned in which the abdominal wound had burst open within five or six days from the time it was sewed together with tiers of buried catgut sutures. This may occur as a result of vomiting, coughing, sneezing or straining at stool, or too early absorption. In most of these cases continuous sutures of catgut had been used. While catgut may do all that Dr. Chase says it does, Dr. Johnson said it has, in addition, another side; it does not always remain strong enough to hold the wound together long enough to get good, strong union. To say that one should never use silk, and that any one who does use it is an old fogy, is not a correct statement to make. While catgut is better sterilized now than it used to be, still, within a couple of weeks, he has seen two of three operators in Washington, who invited him to see them operate with catgut, fail in its use. In each of these cases they would tie their knots and the catgut would break, and after a third ligature was tried they would call for silk. Dr. Johnson insisted that no one should say that silk shall not be used in the abdominal cavity. Too many good surgeons are using it, and have used it hundreds and hundreds of times with no trouble, for such a statement to be credited. The trouble that comes from the use of silk is not so serious as the trouble that comes from the use of catgut. Dr. Archibald Maclaran of St. Paul, in a paper on "Surgical Errors," reported two deaths from the giving way of catgut ligatures in the abdominal cavity. The worst that is said of silk ligatures is that they occasionally cause sinuses on account of infection, delay perfect union in few cases and may have to be fished out, but they are not the cause of death from infection or hemorrhage, as has occurred from the use of catgut.

DR. WILLIAM F. METCALF, Detroit, Mich., explained that the gauze, put into the vagina from above in the course of an operation, is for the temporary purpose only of preventing infection of the field of operation, and with no thought of drainage. The drainage to which he desired to call especial attention is that effected, whether with or without the assistance of gauze, by the removal of the cervix. He believes that the establishing of a free outflow from the pelvic lymphatics thus opened is of importance in these infected cases, and that, by reason of the drainage thus established, both immediate and ultimate results are better than can be attained by the supravaginal operation. Dr. Metcalt did not claim originality in the method of covering raw surfaces, but he did claim for this operation, besides the merit of free lymphatic drainage, a satisfactory restoration of the supports of bladder, vagina and rectum. In 110 cases reported, with ultimate results, some of them five or six years after the operation, the percentage presenting bladder irritability after operation, but not before, was 23.6; bladder irritability before, but not after, in 16.3 per cent., neither before nor after, in 50 per cent.; both before and after, in 10 per cent. These figures, Dr. Metcalf thought, speak for the efficiency of the bladder supports. In the pathologic study of these cases, there were 95 in which the endometrium was examined microscopically. In 77 the Fallopian tubes were studied in section, and in 82 the ovaries were carefully examined. Of the last named, 30.5 per cent. showed no Graafian follicles nor primordial cells in the section. There were 80 per cent. of ultimate cures from all symptoms for which the operation was done. By way of comparison, it is interesting to note that Schauta reports 80 per cent. of ultimate cures after total extirpation, a better showing, Dr. Metcalf thought, than can be made by those who resort to bilateral salpingo-oöphorectomy in preference to hysterectomy.

DR. HENRY O. MARCY, Boston, Mass., called attention to his depressor speculum; it brings the uterus quite external. The needles he uses were devised twenty-five or more years ago. On either side of the eye they are formed so as to keep the ligature from slipping, a matter of importance in the use of the double continuous suture. In reference to animal suture, he said that the connective tissue of the catgut is the sheath of the intestine. In preparing catgut, it is a putrefying mass until the connective tissue sheath is separated. It is divided longitudinally into different sizes. Catgut is strong and inelastic only when dry. The moment it is buried in the tissues, it is put to soak. Dr. Marcy regards the buried animal suture his best contribution to surgery.

DR. WALTER B. CHASE, Brooklyn, admitted that the question which Dr. Johnson emphasized is a very pertinent one. Plain catgut will last from three to ten days, while chromicized catgut will remain longer, according to chromization, which is a matter of detail with the maker. There is, he said, a scientific basis for the assumption that any suture material which is unabsorbed in the tissues beyond the period of three weeks may act as a foreign body and is unnecessary. Without wishing to cast opprobrium on the gentlemen whose experience Dr. Johnson related, he stated that they only attempted its use, the incident has no conclusive pertinency here; and apparently they lacked familiarity with its use in intraperitoneal surgery. Plain catgut must be tied as directed in his paper or the ends may macerate and cause slipping. With this precaution it may be used with satisfaction and safety within proper limitations. As soon as surgeons get away from the idea that buried sutures and ligatures are of more than temporary value, Dr. Chase said, much will be accomplished in the technic of operative procedure.

ISOPRAL AND CHLORAL HYDRATE.*

E. IMPENS, M.D., PH.D.,
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In an exhaustive paper which I published in 1903[1] I was the first to draw attention to the hypnotic properties of trichlorisopropylic alcohol, or isopral. I have made numerous experiments which show that the drug acts more effectively than chloral, while at the same time the range of the dose is greater.

The results of my experiments have been confirmed by Dr. Schmitt, professor of therapeutics in the University of Nancy.

He says:[2] "My experiments have led to results which correspond closely with those obtained by Impens. . . . " With reference to its rapid action—one of the characteristic properties of isopral—he expresses himself in the following terms: "The rapidity of absorption is demonstrated by the fact that the effects of the drug appear very quickly, from two to three minutes sufficing for an intraperitoneal injection, and when given by the mouth five or six minutes being sufficient with slightly larger doses. The absorption of chloral is sensibly slower."

Schmitt also found, as I had done, that the hypnotic action of isopral is not only greater but that the toxic quotient is more favorable. I may be permitted to reproduce a table published in his paper which shows the hypnotic and toxic doses as determined by him and by myself. It will be seen that the similarity of results leaves nothing to be desired (Table 1).

TABLE I.

	Isopral.		Chloral hydrate.
	Impens. Per ct.	Schmitt. Per ct.	Per ct.
FISH.			
Hypnotic dose	0.01	.....	.....
Toxic dose	0.25	.....	.....
Toxic quotient	2.5	.....	.....
FROGS.			
Hypnotic dose	0.143	0.175	0.312
Toxic dose	0.673	0.71	0.937
Toxic quotient	4.7	4.0	3.0

* A reply to an article with the same title by Dr. R. A. Hatcher which appeared in THE JOURNAL, June 1, 1907, p. 1849.

1. Therap. Monatshefte, September, 1903.
2. Rev. Méd. de l'Est, No. 20, Oct. 15, 1904.

CATS (PER OS).			
Hypnotic dose	0.09	.....	0.2
Toxic dose	0.40	.....	0.25
Toxic quotient	4.4	.....	1.25
GUINEA PIGS (SUBCUT.).			
Hypnotic dose	...	0.16	0.25
Toxic dose	...	0.75	0.85
Toxic quotient	...	4.7	3.4
RABBITS (PER OS).			
Hypnotic dose	0.2	0.2	0.356
Toxic dose	0.9	0.85	1.54
Toxic quotient	4.5	4.25	4.2
DOGS (PER OS).			
Hypnotic dose	0.093	0.1	0.25
Toxic dose	0.6	0.6	1.0
Toxic quotient	6.4	6.0	4.0

A comparison of these figures leads Schmitt to conclude that, given equal doses, isopral is more effective and, except for the cat, is distinctly more toxic. When one, however, examines the toxic quotient, i. e., toxic dose ÷ hypnotic dose one finds that the difference between the two doses is always greater in the case of isopral than in that of chloral, and that, therefore, as regards the animals experimented on, isopral is safer.

Professor Mayor of Geneva has also made a comparative study of the two drugs and their effects on warm-blooded animals, and has also satisfied himself of the rapid action and powerful hypnotic effect of isopral.

It will be enough to quote a few sentences from his paper,[3] "Chloral, Dormiol, Hedonal and Isopral and Their Effects on the Circulatory System":

For the rabbit we have found the hypnotic doses of isopral and chloral to be: Chloral, 0.1 gm.; isopral, 0.06 gm. per kilo weight of the animal when injected into the marginal vein of the ear. Hedonal and isopral act almost instantaneously, whereas dormiol, and especially chloral, do not attain their maximum effect until some little time after the injection. This corresponds to what we shall find when we examine the tracings from the dog, viz., a comparatively abrupt appearance of the hypnotic and anesthetic state.

When we record the fact that our animals woke up much more rapidly and readily after hedonal or isopral, and when we find the same prompt and natural return to consciousness recorded on the tracings from the dogs, we are simply confirming the observations of the clinicians. Though hedonal and isopral may have benefited at the beginning from the enthusiasm habitually accorded to new remedies, the above entitles us to say that the property of permitting a more easy return to consciousness with which the drugs were credited, was not merely a product of imagination of the first observers.

In common with all drugs belonging to the chloral group, isopral acts on the circulatory system and lowers the blood pressure more or less, according to the dose given.

I showed in my paper that the fall in the blood pressure is less marked with isopral than with chloral, and that with a simple hypnotic dose it is only slight and largely due to dilatation of the vessels. There is no detrimental effect on the heart except with higher doses.

Mayor has carried out numerous experiments concerning the effect of chloral and isopral on the circulatory system and shares my views entirely.

From the interesting paper mentioned above we find that Mayor injected a 1 per cent. solution of isopral into the femoral vein of rabbits at the rate of 2 c.c. a minute.

The author's results of twenty-four experiments are summarized in Table 2.

TABLE 2.

	Chloral.		Isopral.	
	Press.	Pulse.	Press.	Pulse.
Before the injection	100	100	100	100
After end of injection	85.8	95.2	96.5	104
Twenty min. after end of injection	83.6	91.2	92.4	100

3. Rev. Méd. de la Suisse Romande, Dec. 20, 1905.

"Speaking generally, therefore," he says, "we find that a hypnotic dose of chloral lowers the blood pressure and retards the pulse of the rabbit more than isopral."

Mayor conducted similar experiments on dogs. He draws attention to individual differences, which are frequently seen in these animals, and warns against the use of ether as an anesthetic.

In order to avoid the errors that would have resulted from individual differences, every dog was subjected in turn to the action of chloral and of isopral, so that the effects of the two drugs could be compared in the same animal. A 2 per cent. solution was injected into a superficial vein of the knee at the rate of 10 to 20 c.c. per minute.

The results are shown in Table 3, which is an exact copy of the one given by the author:

TABLE 3.

	Chloral.		Isopral.	
	Pressure.	Pulse.	Pressure.	Pulse.
(1)	100.	100.	100.	100.
	49.	183.	76.	182.
	63.6	144.	77.	182.6
(2)	100.	100.	100.	100.
	63.6	158.	80.	144.
	61.	179.	89.	154.
(3)	100.	100.	100.	100.
	59.7	108.2	67.	118.6
	61.	113.	77.2	143.4
(4)	100.	100.	100.	100.
	69.1	143.	75.6	160.
	70.7	143.	87.2	159.
(5)	100.	100.	100.	100.
	85.5	138.1	90.	224.3
	91.3	247.3	100.	178.5
(6)	100.	100.	100.	100.
	67.5	269.	70.5	170.
	67.5	269.	76.5	151.
(7)	100.	100.	100.	100.
	65.	81.	85.	185.
	67.	...	92.	204.
(8)	100.	100.	100.	100.
	58.9	159.4	67.5	174.3
	69.9	138.3	89.5	171.4
(9)	100.	100.	100.	100.
	79.4	223.	85.1	135.
	104.	217.	90.5	113.6
(10)	100.	100.	100.	100.
	64.8	212.	70.9	147.9
	68.9	245.	82.3	150.9
(11)	100.	100.	100.	100.
	86.2	19.4	83.3	159.
	95.8	230.7	100.	177.
(12)	100.	100.	100.	100.
	...*	...	83.3	116.1
	...*	...	85.	130.

Professor Mayor says: "In isopral we have a drug less poisonous than chloral, less poisonous even than dormiol. The tracings are typical. Isopral has not, with one solitary exception, diminished the pressure more than chloral."

He, therefore, draws the following conclusions regarding the superiority of isopral over chloral. The representatives of the chloral group which induce sleep may be classified as follows in order of their diminishing toxic effect on the heart and blood vessels: Chloral, dormiol, hedonal and isopral.

"According to our researches hedonal and isopral turn out to be less noxious than chloral."

Frey made comparative experiments with chloral hydrate, butyl chloral hydrate, chloretone, chlorane and isopral in the pharmacologic laboratories of Professor Kionka in Jena and came to the same conclusions, viz., that isopral shows the greatest interval between the minimum physiologic dose and the lethal dose.

Lastly, I may mention an article by Annibal Carusi[4] on "The Physiologic and Therapeutic Action of Isopral." This author found, as did his predecessors, that a simple hypnotic dose of isopral lowers the blood pressure but slightly. Further, he also found, as I did, that while

*Died during the night.

4. Riforma Medica, Nov. 10, 1906.

the number of respirations to the minute was diminished, the respirations became deeper.

The pharmacologic properties of isopral, therefore, are well defined, and the results of experiments on animals have been fully confirmed by the numerous clinical investigations undertaken since the introduction of the new hypnotic into materia medica.

One author, however, R. A. Hatcher of New York, has recently published an article in THE JOURNAL of the American Medical Association in which he expresses a less favorable opinion of isopral. He maintains that, far from being safer and less noxious than chloral hydrate, it is, on the contrary, more dangerous, and he supports his views by certain experiments carried out on animals. In my opinion these experiments are not conclusive. They are vitiated by various grave errors to which I wish to draw attention.

Hatcher endeavors in the first place to show that I have fixed the minimum effective dose of isopral too low for the cat. This conclusion he bases on one single experiment, on one single cat. And because this animal did not go to sleep with 1 gm. per kgm. he declares that 0.09 gm., which I had found, is wrong. Hatcher has evidently not a very clear idea of what is meant by a minimum effective dose. I may refresh his memory perhaps and say that the minimum effective dose of a hypnotic for a given animal species is the smallest possible quantity of the drug which may induce sleep, and not the dose which induces sleep without exception in every animal of the species. If some cats go to sleep with 9 cgm. of isopral per kgm, it is not in the least necessary that this dose should send every cat to sleep. According to the terms of the definition, therefore, it is impossible to determine the minimum effective dose by a single experiment.

At the same time Hatcher commits a second mistake: He takes no account of individual differences, although they play such an important part in pharmacology as well as in therapeutics. It is these differences which render a knowledge of the range of the dose so important in estimating the value of a drug. Obviously, the individual differences will make themselves felt particularly at the two extremes and, therefore, in the minimum effective dose.

A hypnotic dose which ensured sleep in all the animals would inevitably come very near to the toxic dose and would have nothing more to do with the minimum effective dose. I drew attention to these differences when I was discussing the effects of the drug on the dog. Hatcher might have obtained information on the subject in my paper.

This author commits the same error in the case of the lethal dose. He finds that I have given the fatal dose of chloral hydrate too low for the cat. He forgets that while some cats may resist doses of 0.3 gm. to 0.375 gm. per kgm., there are others which succumb to 0.25 gm. It is necessary, therefore, to multiply experiments in order to arrive at reliable results.

Hatcher evidently attaches no importance to the mode in which a drug is administered. While in all my experiments I gave the drug by way of the empty stomach—a method which is rational since the processes of absorption are perfect under these conditions—Hatcher gives the drug by rectum, and, without adducing a shadow of proof, he declares that this mode of administration does not affect the results in any way. Does he mean to say that absorption by the rectum is more rapid? He does not prove it. Nor does he say whether or not he emptied the rectum before giving the injection. Or does he imagine that the absorption of a solution is equally rapid when the rectum is loaded with effete matter as when it is empty?

There can be no doubt that the action of a drug like isopral, which combines so easily with glycuronic acid, will depend largely on the rapidity of absorption, especially when small doses are concerned. If absorption is retarded somewhat the drug is neutralized in proportion to the rate of absorption. In the case of large doses the effect is not so evident at first sight, because the quantities absorbed are still larger than the tissues are capable of combining with. Nevertheless, the effect exists, as has been proved by pharmacologic and clinical experiments.

Hatcher should have administered the drug by mouth in order to be logical, or he should have shown that rectal injections did not affect the conditions of absorption.

I have carried out the experiments of this kind myself, and I have found that in general the action of isopral in small doses becomes uncertain when the drug is administered by rectum, though it acts so remarkably quickly when given by mouth as to constitute a characteristic of the drug, e. g., I found that one particular cat which goes to sleep quite well with 0.1 gm. per kgm. does not always do so with the same quantity given by rectum. In thoughtlessly choosing a different mode of administration Hatcher, therefore made it impossible for him to recognize one of the essential properties of isopral observed by all other investigators as well as myself, viz., the rapidity of action and the rapid return to the normal state.

If the experiments of Hatcher leave much to be desired, his interpretation of his results is just as faulty.

Moreover, he makes a singular admission for a pharmacologist, viz., that he is unable to distinguish between the medicinal hypnosis of cats and dogs and natural sleep, which even a novice should be able to do.

In his experiments on blood pressure and respiration there is likewise a lack of judgment in the choice of methods.

First of all he experiments on dogs anesthetized with ether. Preliminary anesthesia is absolutely contraindicated when one wishes to study the effect of a drug on the circulatory system. There is no anesthesia which does not exert some influence on this system. From the very beginning, therefore, Hatcher placed himself in bad conditions for experimenting. Further, instead of giving the drug by the mouth, the natural and rational method, he injected the drug into the veins; e. g., in Experiment 12 he injected in ninety-two seconds 0.7 gm. of isopral into the femoral vein of a dog weighing 7 kgm., and he is surprised to see a sudden fall in the blood pressure and intermittent respiration. He has scarcely finished this injection when he begins another of the same kind. One might as well send the animal to sleep with the blow of a hammer; the result would be the same.

Such an experiment appears to me irrational. The reflection of a moment should have convinced him that a hypnotic with a coefficient of separation (between water and lipoid substances) so high as isopral—9.5—would pass excessively fast from the blood plasma to the lipoid substances of the nerve centers, much more quickly than chloral, which has a coefficient of only 0.22. One must be circumspect, therefore, in injecting such an active substance into the circulation.

In spite of this, Hatcher did not take the trouble to find out what were the minimum effective and fatal doses of isopral for intravenous injection into the dog. In the hands of an expert and experienced pharmacologist like Professor Mayor the intravenous method may sometimes yield satisfactory results, as we have seen, but in the hands of less experienced investigators it becomes a source of gross mistakes, and may even furnish results diametrically opposed to the actual state of affairs. And this is what has happened to Hatcher. If he had administered his drugs by the mouth he would not have worked in the dark, and he would have been able to see that the hypnotic dose of isopral lowers the blood pressure but slightly and does not affect the heart or arrest respiration. As I have shown, isopral does not retard the latter more than corresponds to the diminished consumption of oxygen during rest and sleep. The frequency of the respiratory movements is diminished, the amplitude increased. The exchange of air, therefore, is more complete for each respiration.

Even here Hatcher placed himself in conditions which prevented him from taking account of the various effects of isopral.

In conclusion, I do not think that the experiments of this author can alter in any degree the opinion which I have given on isopral, an opinion which has been strengthened by the work of Schmitt and Mayor.

The deductions which Hatcher has drawn concerning the clinical application of the drug naturally crumble to pieces. I may recall the circumstance that isopral apparently does not decompose in the system, but changes into a compound of glycuronic acid which I have isolated and analyzed, and described.[5] Hatcher need, therefore, have no fear as regards the effects of products of decomposition of isopral on the system.

I have finished with what I have to say on the main points. It remains for me to make an observation regarding the style of the article. I do not lay any stress on the exaggerations contained in the introduction, but I protest most decidedly against the insinuations which accompany the criticisms.

ISOPRAL AND CHLORAL HYDRATE.

COMMENTS ON THE ABOVE CRITICISM BY IMPENS.

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Impens brings forward nothing new in this communication. Nearly half the article is taken up with quotations from other writers to support his previous contentions; the remainder is devoted to a criticism of Hatcher's methods. A very little examination suffices to show that Impens presents the matter from a most prejudiced point of view. By selecting only the parts favorable to his side and ignoring everything unfavorable his quotations of certain authors give an entirely erroneous impression of their attitude toward some of the chief points under discussion; he attributes experiments to one author (Frey) when there is evidence that this author never performed such experiments. He accepts without question other experiments, apparently favorable to his contentions, although a very little examination shows that they were made in such an unscientific way that no conclusions can safely be drawn from them. His discussion of Hatcher's results is likewise one-sided and in some cases amounts to actual misquotation; he criticises Hatcher for certain omissions, although many of his own experiments are open to precisely the same criticism. The article appears to be for the most part a hasty highly-prejudiced, ill-considered production which contributes little to the elucidation of the subject under consideration.

That these criticisms of Impen's paper are justified is shown by the following considerations:

SCHMITT'S RESULTS.

Impens quotes Schmitt as having confirmed his results as to the "toxic quotient" of isopral. To a certain extent that is true, but a closer examination of Schmitt's figures shows that the confirmation is not as complete as Impens' words would lead one to suppose. Moreover, the criterions for judging the "effective" dose can not be so definite that they would be interpreted alike by all observers, so that this seriously impairs the availability of Schmitt's conclusions. Table 1 of Impens' article, taken from Schmitt, is a composite table made up partly from Impens' figures and partly from those of Schmitt. With one exception, all the figures for chloral are taken from one of Impens' previous papers. Schmitt determined the toxic quotient for isopral for frogs, rabbits and dogs and compared these with Impens' figures for chloral. In every case Schmitt's figures are less favorable to isopral than are Impens', as is shown by the following:

	Impens.	Schmitt.
Frogs	4.7	4.0
Rabbit	4.5	4.25
Dog.	6.4	6.0

Schmitt adopted Impens' figures for chloral; if these figures are as low as those of Impens for isopral are high, then the differences between the two drugs disappear in the case of the frog and rabbit and are materially reduced in the case of the dog. As regards the latter animal, Impens[1] admits that his figures as regards isopral are extremely uncertain, and Mayor, whom Impens quotes so extensively, states (p. 833) that he abandoned the attempt to determine the hypnotic dose of chloral for dogs on account of the great irregularities (varying from 0.17 to 0.55 gm. per kilo. intravenously). Under these circumstances the experiments on the dog may be disregarded. Schmitt's figures for the toxic quotient of isopral in the case of the guinea-pig (4.7 as compared with 3.4 for chloral) are favorable to isopral, but they were obtained in an unsatisfactory way, viz., by subcutaneous injection. Impens records no figures for this animal. Schmitt reports no experiments on cats; this is to be especially regretted, for Hatcher obtained results widely different from those of Impens with this animal. A marked and definite difference in the toxic quotient therefore exists only for the cat as determined by Impens, and Hatcher's results throw doubt on the value of these. Granting that Impens is correct, however, the results with the cat are so peculiar that they should be classed as idiosyncratic, and there is no reason for assuming that the human organism would exhibit the same idiosyncrasy.

Before leaving the subject of the toxic quotient it is of interest to see what Mayor (whom Impens calls an "expert and experienced pharmacologist") has to say on this subject; on page 855 of the article quoted by Impens, Mayor states: "But this range of dosage (— toxic quotient) estimated for the rabbit seems to us

5 Internat. Arch. of Pharmacodynamics and Therap., Vol 13.

1. Therap. Monatshft., 17, p. 474.

to give no serious information as to human therapeutics" (*"Mais cette zône maniable, appréciée chez le lapin, ne nous parait donner aucun renseignement sérieux quant à la thérapeutique humaine."*) And, after giving some illustrations, he concludes (p. 856): "It is then indeed difficult to draw a positive conclusion from the fact that the toxic quotient of isopral is the larger." (*"Il est donc bien difficile de tirer une conclusion ferme du fait que la zône maniable de l'isopral est la plus large."*)

Impens' paper would undoubtedly lead the reader to suppose that Schmitt shared the former's views as to the superiority of isopral to chloral. That this is by no means the case, however, is shown by the following quotations from Schmitt: "If one examines in detail the action of isopral on the different mechanisms, it is found that this action does not differ sensibly from that of chloral" (p. 658). "On the heart the action of isopral has appeared to me identical to that of chloral in so far as it is difficult for me to find a difference in the cardiograms furnished by the heart of the frog after the administration of the two substances" (p. 660). "Another fact which identifies the action of isopral on the circulation with that of chloral is the vasodilatation" (p. 661). "I have not found, for my part, the diuresis described by Impens" (p. 661). "Résumé: from the experimental point of view, on animals, isopral acts exactly as chloral; the only differences I have found are (1) a more rapid action, (2) a greater activity with equal doses, (3) a more considerable range between the active and the toxic dose" (p. 661). Impens ignores all parts of Schmitt's paper except the last part quoted above. As we have seen, most of Schmitt's figures can not be accepted as satisfactorily showing that isopral has a more favorable toxic quotient.

An impartial account of Schmitt's paper would include such sentences as the following relating to the therapeutic use of isopral (italics mine): "Thus isopral succeeds in those cases where chloral succeeds and fails in those where chloral fails, *so that up to the present at least one is not able to attribute to the new hypnotic any special indications*" (p. 664). "The contraindications of isopral appear to be the same as those of chloral" (p. 665), and finally Schmitt's concluding sentence (p. 666), *"Dormiol is only a succedaneum inferior to chloral. Isopral is the equivalent of the latter; if slight advantages over chloral can be claimed for it, it has, on the contrary, all of its disadvantages"* (*"Le dormiol n'est qu'un succédané inferieur du chloral. L'isopral est l'équivalent de celui-ci; s'il peut revendiquer sur lui de légers avantages, il en a par contre tous les inconvénients"*).

MAYOR'S EXPERIMENTS.[2]

We have seen that Impens ignores all of Schmitt's paper except the small part more or less favorable to isopral. Mayor's paper is used in exactly the same way. Almost the only thing in Schmitt's paper which supports Impens' claims relates to the toxic quotient, and we have already seen that Mayor holds that little importance can be attached to this.

Impens quotes Mayor extensively as having shown that hypnotic doses of isopral are less depressing to the circulation than are similar doses of chloral, but a closer examination of Mayor's paper makes it doubtful if such a conclusion can be drawn from his experiments. In the first place, there is a curious series of changes in certain figures. Impens quotes Mayor as saying that the hypnotic doses of isopral and chloral are

Chloral	0.1 gm.
Isopral	0.06 gm.

per kilo of animal when injected into the marginal vein of the ear. Mayor himself (p. 829) gives the following figures:

Chloral	0.12 gm.
Dormiol	0.13 gm.
Hedonal	0.07 to 0.08 gm.
Isopral	0.06 gm.

These figures are taken from the theses of three of Mayor's pupils; he states that they have been modified from those originally published. Mayor then proceeds to quote the figures found in the thesis by Romanovitch.[3] Romanovitch, however, used in every recorded experiment the figure 0.05 gm. per kilo as the hypnotic dose of isopral for the rabbit. Mayor evidently recognized later that this figure was too small and adopted 0.06; but the experiments which he quotes to show that the hypnotic dose of isopral is less depressant to the circulation than chloral are taken from Romanovitch's paper, where a figure which Mayor admits is too small was used. Is it to be wondered at that he found less depression? Romanovitch injected hypnotic doses of isopral (— 0.05 gm. per kilo according to him) and determined the effects on blood pressure and heart rate. He then prepared a table (one quoted by Impens) in which he summarized these results and compared them with experiments with chloral, performed not by himself (p. 80) but by Mayor and Nutritziano. The latter authors injected chloral in hypnotic doses (0.12 gm.). Thus 2.4 times as much chloral was injected as of isopral and the former was stated to produce a slightly greater depression of the circulation (see table quoted by Impens).

The method by which these figures, quoted by Impens, were arrived at by Mayor and Romanovitch is open to criticism; they represent the average blood pressure and pulse rate before the injection of the drug and two and twenty minutes after the injection. An examination of Romanovitch's tables shows what an imperfect picture such figures give. For example, in one experiment (33) the blood pressure twenty minutes after the injection was 90 mm. mercury, forty-seven minutes later is was 100 mm.; in the experiment immediately preceding (32) the blood pressure twenty minutes after the injection was 60, forty-five minutes later it was 46.

Considering that these figures represent the effects of 2.4 times as much chloral as of isopral and that the differences in the effects are not so very striking, it seems to me that we are justified in concluding that isopral is about twice as toxic to the circulatory system as is chloral. Impens finds the toxicity of isopral for the entire animal (rabbit) to be 1.7 times as great as that of chloral. In other words, the high toxicity of isopral as compared with chloral applies to the circulatory system also.

At first sight Mayor's experiments on dogs seem more conclusive, but a closer examination shows that they are open to even more criticism. Mayor abandoned the attempt to determine the hypnotic doses for dogs by intravenous injection, but states that he injected one drug until the corneal reflex disappeared, and then fifteen days later injected the other drug into the same dog until a similar effect was produced. The doses of chloral were almost invariably much larger than those of isopral. Nine of the twelve experiments cited by

2. Mayor's experiments were published in the Revue medicale de la Suisse Romande, Dec. 20, 1905; they have recently been republished in Therap. Monatshefte, May, 1907.

3. Recherches expérimentales sur l'Isopral, Geneva, 1905.

Impens are taken directly from Romanovitch's theses (p. 97); this author states (p. 84) that he determined the figures for isopral, but that he is indebted to Mayor for the figures for chloral. Apparently one person determined one figure and another the one for comparison. As is well known, the point at which the corneal reflex disappears in a dog is not very sharp; experienced observers would differ. There is thus introduced into most of Mayor's experiments an error (a personal equation), and it is probable that this is for the most part in one direction; it may be high or low, but in any case a person must hesitate to accept the results. These tables are far from giving a true picture of the experiments themselves; the figures are for the blood pressure and pulse rate before the drug was given, when the corneal reflex disappeared and again when this reappeared. All other figures are disregarded; the figures for the minimum depression (which might as well have been selected) would probably have presented a different picture. The "normal" figures were obtained on animals operated on without anesthesia, probably by different persons; the appearance and disappearance of the corneal reflex was also determined (as far as can be judged from the papers) by different persons in most of the experiments.

In any case the differences were not very great, as is shown by the table (p. 854) of Mayor immediately following the part quoted by Impens; in seven of the eleven experiments the greater depression varied from 3 to 8 per cent,, in three from 16.5 to 27 per cent., while in one case isopral caused a greater depression by 3 per cent. Considering the sources of error, not much importance is to be attached to these differences.

It would be interesting to know what doses of the hypnotics were administered; Romanovitch gives them for isopral in the protocols of his experiments, but I can not find the corresponding ones for chloral. The doses for isopral varied from 0.09 to 0.17 gm. per kilo body weight; the average was 0.14. Mayor states (p. 833) that the minimum dose for chloral was 0.17 gm., the maximum 0.55 gm.; he refers to three experiments in which the doses were 0.17, 0.32 and 0.47 respectively. The average of the four figures actually given is nearly 0.38 or nearly three times that for isopral; it is certainly not unreasonable to suppose that the average for chloral was more than twice that for isopral (in similar experiments on rabbits it was 2.4 times). The effects of these doses on the blood pressure were not markedly different; in seven of ten experiments the difference was but from 3 to 8 per cent. If we are justified in drawing any conclusions from Mayor's experiments, it is that isopral is at least twice as toxic to the vascular system of the dog as is chloral; Hatcher found it to be more than twice as toxic. Impens[4] gives the lethal dose of isopral for the dog as 0.6 gm. per kilo; that of chloral was 1 gm. or it required 1.7 times as much chloral to kill as of isopral. In other words, isopral seems to be relatively more toxic to the circulatory system than to the organism as a whole. It should be emphasized, however, that no satisfactory conclusions can be drawn from Mayor's experiments; the above seem to be more reasonable than any others.

Attention may also be called to what seems to be a deliberate distortion by Impens of part of Mayor's paper. In the latter part of his article Impens criticises Hatcher severely for anesthetizing his animals; he does not do Hatcher the justice of stating that the anesthesia was very light and that the ether was withdrawn some time before the chloral or isopral was administered, and that these were then administered not in hypnotic doses but in fatal doses, so that it is very unreasonable to suppose that their action was appreciably influenced by the small amount of ether. In discussing Mayor's results Impens says Mayor "warns against the use of ether as an anesthetic." Mayor simply states that he did not use ether because he thinks that an animal with such a sensitive nose as the dog suffers more from the ether than from the slight operations necessary for the insertion of the cannulas. This sentence of Impens seems to be an effort to prejudice the reader against Hatcher.

Thus we find that Impens is silent concerning Mayor's unfavorable attitude toward the "toxic quotient," that he gives an entirely false impression concerning Mayor's remarks about the use of ether, and that finally in quoting from Mayor's papers he ignores the serious and very obvious objections to this author's methods. Those familiar with Impens' previous writings (the one in which he discussed the product of a rival firm, chloretone, for example) will be struck by this sudden loss of critical ability.

Impens says: "Frey made comparative experiments with chloral hydrate . . . and isopral . . . and came to the same conclusions, viz., that isopral showed the greatest interval between the minimum physiologic dose and the lethal dose." In the only paper on this subject by Frey[5] I have been able to find this author states perfectly plainly that he has taken the figures for isopral from Impens. There is nothing to indicate that he experimented with this drug himself; if there are other papers on this subject by Frey, Impens should have given the reference.

I have not yet been able to obtain Carusi's paper.

HATCHER'S EXPERIMENTS.

In his discussion of Hatcher's experiments Impens again exhibits a very one-sided way of looking on the subject. He is most critical of Hatcher, but apparently forgets that his own experiments are open to precisely the same criticisms. Thus he arraigns Hatcher severely for reporting but "one experiment on one single cat" with a small dose of isopral. Yet Impens[6] placed the lethal dose of isopral at 0.4 gm. because "one single cat" recovered from 0.35 gm. isopral and another died from 0.4. He reported no experiments with doses between 0.1 gm. and 0.35 gm. The "single cat" which recovered from 0.35 gm. evidently had a narrow escape; it received the drug one morning, the respiration sank to 11 per minute and the cat slept all of that and the following day. There is as much reason to suppose that this experiment with 0.35 gm. is an exceptional case as that Hatcher's one experiment was exceptional.

Impens says Hatcher has not a clear idea of what is meant by a minimum effective dose and expresses a desire to "refresh his memory" and says the minimum effective dose is "the smallest possible quantity which may induce sleep." This is not consistent with an earlier expression of Impens. For instance, in choosing the effective dose of chloral for rabbits, he says:[7] "From all the experiments which I have made we may conclude that the effective dose of chloral hydrate for rabbits is 0.356 gr. per kilo. One would even say 0.334 gr., but with that quantity the effect is not certain, and I prefer to accept the former dose." Impens attributes to Hatcher

4. Therap. Monatshft., 17, p. 474.

5. Arch. int. de Pharm. et de Ther., 13, p. 464, 1904.
6. Therap. Monatshft., 17, p. 472, 1903.
7. Arch. int. de Pharm. et Ther., 8, p. 86.

an admission of his inability to distinguish between medicinal and natural sleep. What Hatcher actually said was that it was difficult to fix accurately the minimal hypnotic dose. Evidently Impens himself experienced this difficulty, for it is very plain from a perusal of his protocols that he did not even try to determine the minimal *hypnotic* dose, but chose rather the *narcotic* dose, which is indeed much easier.

Impens is also very remiss in not giving any of the experiments on which he bases the toxic quotient for chloral for cats. As Impens' results with cats were very different from those obtained by himself and others (see Schmitt's tables, quoted by Impens) with other animals, and in such direct conflict with Hatcher's results, he might well have devoted some of the space occupied with a criticism of Hatcher to giving at least a few experiments on this subject.

If Hatcher is at fault in not reporting more experiments on the minimal hypnotic dose of isopral, Impens is at fault in not reporting more experiments on the lethal dose of isopral and in not reporting in detail any experiments on either the hypnotic or the lethal dose of chloral for cats.

Every word of criticism Impens directs against Hatcher on this score is equally applicable to Impens' own work.

The question whether the results of the rectal injection of these drugs gives results comparable to those when they are given *per os* can be easily determined by experiment. Impens argues that the absorption from the rectum is slower; Hatcher states that it is somewhat more rapid. Slow absorption might explain the fact that Hatcher placed the hypnotic dose of isopral higher than did Impens, but it would not explain why Hatcher found the toxic dose for isopral lower and that for chloral higher than did Impens. Impens himself stated in a previous paper[8] that the absorption of chloral from the intestine (the author quoted, Walton, says "rectum") is much more rapid than from the stomach.

Impens criticises Hatcher's blood pressure experiments chiefly from a point of view different from that which prompted Hatcher to make them. Impens says: "If he (Hatcher) had administered his drugs by the mouth . . . he would have been able to see that the hypnotic dose of isopral lowers the blood pressure but slightly." Hatcher was not determining the effect of a hypnotic dose on the blood pressure—he was determining the relative danger of the two drugs "by their depressant action on the respiratory and vasomotor centers." Surely no one could suppose that if Hatcher were experimenting with hypnotic doses he would have injected the drugs until they killed the animals.

Impens also says: "Hatcher did not take the trouble to find out what were the minimum effective and fatal doses of isopral for intravenous injection into the dog," and then refers to Mayor. If Impens had read the papers of Mayor and Romanovitch carefully he would have known that these authors thought it useless to try to make such determinations. It seems to me that Hatcher's blood pressure experiments simply afford further evidence that isopral is at least twice as toxic as chloral to the vascular system; this also seemed to be the only conclusion that could be drawn from Mayor's experiments with hypnotic doses.

Impens states: "Hatcher need have no fear as regards the effects of products of decomposition of isopral on the system." This is an inexcusable misquotation. Hatcher had simply quoted Kress as stating that "we know nothing of the injury resulting from its continued use or from its decomposition products." Incidentally, Impens rather contradicts himself in saying: "Isopral does not decompose in the system." In the paper[9] from which he quotes he states: "About 60 per cent. of the product was excreted by the kidney. The rest must have been oxidized after the displacement of the chlorin atoms."

Viewed from an impartial standpoint, or rather from the standpoint of one who is anxious to find good in the products of a firm which has the great merit of endeavoring to discover something really new, it is impossible to resist the conclusion that this article of Impens weakens rather than strengthens the position of isopral. If the promoter finds it necessary to pass over in silence much of the work of Schmitt, selecting from it only the small part favorable to isopral; to ignore Mayor's criticism of the value of the "toxic quotient," but to quote in extenso experiments of very questionable value from this author; to distort Mayor's remarks about the use of ether anesthesia, and apparently to misquote Frey; to engage in abusive language concerning Hatcher, although his own experiments are for the most part open to precisely the same criticisms that he makes on Hatcher's experiments—the impartial reader can not avoid the suspicion that if isopral offers advantages over chloral they are so slight as LOT to be easily detected. And in this connection the claims made by the manufacturers for isopral should not be forgotten; for example, they claim that it is "the safe hypnotic of the chloral series," that it is "much freer than chloral from depressing effects on the heart and nervous system," etc.

It would seem better to confine the claims to the more rapid action which is universally conceded and which might be of distinct advantage, for instance, in convulsive conditions, and to the advantages which may come from the smaller doses necessary to produce a given effect.

Hatcher's experiments, although by no means complete and exhaustive, amply justify the warning he uttered against accepting without question the optimistic and enthusiastic statements of even the best firms—firms which are making almost yearly additions to the list of really useful drugs.

8. Arch. int. de Pharm. et de Ther., 8, p. 84.

9. Arch. de Pharmacodyn., xiii, p. 40.

HUMAN MYIASIS FROM THE SCREW-WORM FLY.

(*Compsomyia macellaria*—Fab.).

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The attacks of the screw-worm fly or *Compsomyia macellaria* (Fab.) on man and domestic animals have been observed for many years in the southern and west central parts of the United States. The disease is not rare, and in man its results are always serious or fatal if not recognized and actively and properly treated. The twenty-three cases reported occurred during a single

summer.[1] Its attacks on horses, cattle, sheep and hogs have been noted in Kansas by Snow,[2] in Louisiana by Morgan,[3] in Mississippi by Weed,[4] and in Texas by Francis.[5] According to Azaria,[6] the fly has been observed in the following countries: Islands of America, North America, Mexico, Cuba, Colombia, Venezuela, Cayenne, Brazil, Peru, Chili, Uruguay, Argentine Republic and New Holland. The territory in which the greatest damage is done is within the tropical and subtropical belt. "It is common from Argentine Republic to Canada and has probably received more specific names (20!) than any other American fly" (Snow). Their hominivorous habits have gained for them the synonyms of *Lucilia homnivoraz* (Coquerel), and *L. hominivorones* (Cenil).

The fly is a small species less than half an inch (1 cm.) in length and of a bluish-green color with metallic reflections (Fig. 1). It is particularly distinguished from related forms by the presence of three longitudinal black stripes in the thorax. The head is reddish or yellow and the body is covered with stiff black hairs. The fly appears in early summer, the exact time depending on the latitude, after having passed the winter as an adult, either in a latitude free from extreme cold or in a protected location. In depositing its eggs it selects some decaying matter or wound and lays a mass of eggs at once; at least three or four hundred may be deposited by a single female in a space of a very few moments and the same fly may lay at different times and in different places hundreds and even thousands of eggs. (Osborn[7]).

The eggs hatch within a few hours. If the eggs are laid in a moist place and on a warm day they require less than one hour to hatch, according to Francis, or about nine hours, according to Weed. The idea that they may be deposited in a living condition is refuted by all careful observations. The larva, or maggot (Fig 2), is a whitish, footless grub, rather slender, and quite active. It burrows into the tissues of the affected animal or into the mass of putrid flesh or decaying matter that furnishes it food. It grows rapidly and matures in five or six days, according to Weed, or in about a week, according to Francis. When mature it escapes from the wound it has infested or wriggles away from the mass of matter in which it has developed and buries itself in the ground to transform into the adult.

The pupæ are brown in color, cylindrical, rounded at the ends and about two-fifths of an inch long. The length of time passed in the pupa stage appears to vary, but observers agree on from nine to twelve days as the usual time. Francis gives nine for the shortest and fourteen for the longest period observed by him. From this history it is evident that there may be a succession of many generations during a season, and that there are hosts of the insects in all stages of development from their appearance in the early part of the season until they are checked by the return of cold weather.

To recapitulate the life cycle this small fly is capable of laying hundreds of eggs. These eggs (Fig. 3) in proper environment hatch out into the screw-worm in less than twenty-four hours. This worm or maggot reaches maturity in about a week, during which time its ravages in animal tissue have been most persistent and destructive. At the end of this period, if unmolested, it instinctively wriggles away from the host to bury itself in the ground during transformation, this puparial state occupying from nine to fourteen days, at the end of which time the mature fly emerges.

There has been much discussion among entomologists, and still more among cattlemen and ranchmen as to the rôle the "gray fly" may play in this disease and as to whether the eggs are hatched within the parent's body or not. The species shows much individual variation, and it is possible that the difference in the color of the gray fly may not mean a different species. Our observations are limited, but we have removed a "gray fly" from the nares of a patient containing screw-worms in various stages of larval development, and since on squeezing out the abdominal contents it did not eject larvæ but eggs, circumstantial evidence would point to the fact that this fly was depositing eggs when caught. It may have been

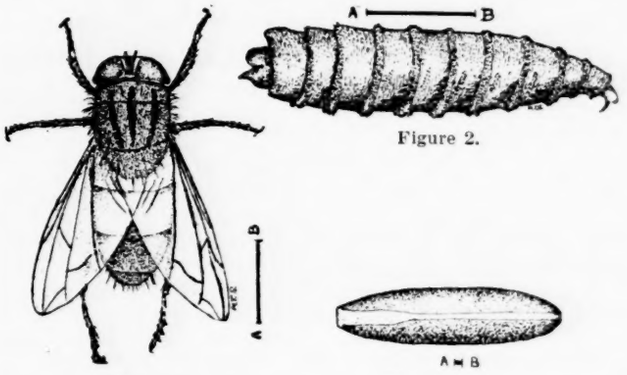

Figure 2.

Figure 1.

Figure 3.

Fig. 1.—The adult screw-worm fly (*Compsomyia macellaria*—Fab.) magnified 3.5 diameters. The line A B is the actual length of the fly.

Fig. 2.—Larva of the screw-worm fly (*Compsomyia macellaria*—Fab.), magnified 3.5 diameters. The line A B is the actual length of the maggot.

Fig. 3.—Egg of the screw-worm fly (*Compsomyia macellaria*—Fab.), magnified 30 diameters. The line A B is the actual length of the egg.

The material from which these illustrations were made was kindly furnished by Dr. Mark Francis of the Texas Agricultural Experiment Station.

attracted, however, by the strong odor and simply feeding, as there were many flies, both blue-green and gray, around at the time. Later we caught a "gray fly" which proved to be a species of the "blow fly" which did deposit larvæ and not eggs. This species is supposed not to infect living animals. Three mature larvæ, however, obtained from another case were placed in dry warm earth. In ten days three bluish-green flies were hatched out. These were fed on tainted beef and plenty of water. They died, two on the fourth and one on the fifth day, without laying any eggs. It was impossible to determine whether they were poisoned by the meat or whether they were all males. These flies were compared with type specimens in the entomologic collection at the University of Kansas and the identification kindly verified by Dr. F. H. Snow.

1. In our most popular text-books this serious disease in the southwest has received but scant notice, for instance in Osler's text book, Sixth Edition, page 55: "The larvæ of the (*Lucilia*) *Compsomyia Macellaria*, the so-called screw-worm, have been found in the nose, in wounds, and in the vagina after delivery. They can be removed readily with the forceps; if there is any difficulty, thorough cleansing and the application of a bandage is sufficient to kill them. . . . In the nose and in the ear the larvæ may cause serious invasions." Again, Boston, "Clinical Diagnosis," page 513: "These larvæ are known to burrow through the tissues, destroying the mucous membrane, the muscles and the cartilages. They may invade the serous sacks and the bones, producing extensive lesions. They have also been recovered from the interior of the eye and the conjunctivæ. . . . George Gray (British Med. Journal, March 28, 1903) has reported five instances in which the larvæ of the screw-worms were found in human beings."

2. Psyche, iv, p. 27.

3. Bulletin 2, second series, Louisiana Experiment Station.

4. Bulletin 14, Mississippi Experiment Station, 1891.

5. Bulletin 12, Texas Experiment Station.

6. Williston: Psyche, iv, pp. 112.

7. Bulletin 5, New Series, U. S. Department of Agriculture, Division of Entomology.

A few cases cited from Osborn's article will show that the mortality from this myiasis twenty or thirty years ago was considerable, and, in fact, it is to-day, if the cases are not properly and promptly treated.

Azaria was, I believe, the first observer who noted cases of human myiasis in South America. Coquerel, many years later, called the attention of physicians and naturalists to the frequent and fatal accidents which this evil produced among the exiles of Cayenne. According to this author, Dr. Chapuis, physician in chief of the French marine, attended one case in which the larvæ of *C. macellaria* had penetrated the frontal sinuses, causing the death of the patient; also one very unclean person who was attacked in the nasal fossæ and pharynx, succumbed after he had ejected one hundred and twenty larvæ. There were, as M. St. Pair observed, in the same country, six similar cases, of which three terminated in the death of the patients after cruel sufferings; in two the nose was destroyed, and in the third deformed. In still another case observed by M. St. Pair more than three hundred larvæ were removed by means of injections, but he was not able to obtain them all, and the remainder soon penetrated the ball of the eye, destroyed the lower eyelid in consequence of gangrene, invaded the mouth, corroded the gums, laid bare the inferior maxillary, and the victim died seventeen days after his entrance into the hospital.

Dr. Joshua Richardson, of Moravia, Iowa, in the *Peoria* (Ill.) *Medical Monthly*, describes a fatal case and also one which recovered, both from Kansas. He also says that this patient was the only one of twelve cases known to him that did recover.

The following abstract of a case is quoted because its symptoms and pathologic results have been accurately noted. Dr. B. J. Britton, of Mapleton, presented it at the meeting of the Southeast Kansas District Medical Society in January, 1883:

History.—On the evening of Aug. 22, 1882, Mr. M. E. H. complained of a peculiar sensation at the base of the nose and along the orbital processes, which was first followed by inordinate sneezing, and later by a most excruciating pain over the frontal region which also involved the left superior maxilla. This patient had suffered and was still suffering from an aggravated form of nasal catarrh. The discharge was quite purulent, of a yellow color, frequently tinged with blood, with a disagreeable odor, which was at times intolerably offensive. On August 24 there was a profuse discharge of purulent matter from the nostril and mouth, when the pain instantly subsided. This discharge continued for three days, during which time as much as sixteen ounces escaped. The odor became much more offensive, his cough was more troublesome, and fever increased to such an extent as to produce slight delirium for twelve hours. The os hyoides was evidently destroyed at this time. The soft palate had given away, and there was an entire inability to protrude the tongue or use it in speech. About that time a maggot dropped from the nose. That was the first indication that there was anything of the kind present. There was not, as in some cases reported, any swelling or movements noted under the skin, nor was there at any time any complaint of the patient which would lead to a knowledge of their presence. I was surprised to see them drop from the nostrils and wriggle from the mouth without any discomfort to the patient unless they came into contact with the Schneiderian membrane, when they annoyed him greatly and every effort was made on his part to expel them; but as soon as expelled no further trouble was manifested until another would get into the nostril. They were evidently burrowing under the palatine fascia, as it presented a honeycombed appearance and in places patches were totally destroyed as large as a dime (18 mm.). They continued to drop from the mouth and nose of the patient for the following forty-eight hours, during which time 227 were counted and the estimated number exceeded 300. The patient lived four days after the last maggot came away.

Dr. Britton put five maggots in dry earth. Three flies hatched out in fourteen days and were identified as *C. macellaria* (Fab.) by Dr. F. H. Snow of the University of Kansas.

We have been able to collect twenty-three cases from our own practice and that of other physicians in Arizona during the fly season of 1905; the first eighteen are cases of nasal myiasis, the last five the site is elsewhere. Short accounts of the various cases follow:

CASE 1.—Reported by Dr. R. N. Looney, Prescott.

History.—C. C., white, male, age 55, goat-herder, had suffered with chronic nasal catarrh. He had become infected with screw-worms three days before he was seen. He had to travel thirty-five miles to consult a physician and was afraid he would lose his mind on the way because of the intense pain over the frontal region. There was profuse epistaxis, and not, as commonly, a mere sanguineous purulent discharge; intense pain, most severe in the region of the frontal sinus on the right side. The odor of the discharge was very offensive. A 25 per cent. solution of chloroform in olive oil was injected into the nasal cavities with a syringe. About sixty larvæ were removed the first time. Two days were required to completely rid the victim of the pest and at least a hundred larvæ in all were removed. It is interesting to note that chloroform in this strength induces a mild intoxication not unlike that of alcohol in the same stage, but its duration is very short. He recovered.

CASE 2.—*History.*—J. C., white, male, age 55, rancher, with well advanced epithelioma of the nose, causing partial loss of tissue of left ala. He was infected with screw-worms about June 17, 1905, and admitted to the County Hospital June 19. A 2 per cent. solution of cocain was applied to the denuded areas, they were then irrigated with peroxid of hydrogen diluted with an equal part of water, followed with 1 per cent. carbolic acid solution; this was followed with 25 per cent. chloroform in olive oil. The following day potassium permanganate, 1 to 2,000, was used as a deodorant. Chloroform was used as on the previous day, bringing away many larvæ, but it was impossible to remove all. The patient's suffering was intense, and the loss of tissue rapid, and the stench from the combined action of the cancer and screw-worms was intolerable. The treatment was continued during the third and fourth day, but it was impossible to remove all of the larvæ, and, from the character of the surroundings, to prevent re-infection. He grew worse rapidly and died on the morning of the fifth day after admission. Several hundred larvæ in all were removed. Their destruction of the soft and bony tissue was such that one could look from the lower border of the frontal bone directly into the esophagus through an opening 2½ inches wide by 3½ inches long, though the patient had been attacked only seven days before. Much of the esophagus was destroyed and some larvæ were found in the stomach.

CASE 3.—*History.*—C. F., white, female, age 40. Admitted to County Hospital July 1, 1905, infected with screw-worms. She was predisposed to the invasion either from a previous myiasis or a syphilitic rhinitis; she was also addicted to the use of morphin and was infected while sleeping in the open air under the influence of the drug. The usual symptoms were present, viz.: Severe pain in the deep temporal region and over the frontal region, with profuse serosanguineous, foul-smelling discharge and mouth breathing. She was treated by injecting chloroform 25 per cent. in olive oil, into the nasal chambers. This would arouse the worms, and many, hitherto hidden in the antrum and frontal sinuses, would come into view where they could be removed with "alligator" forceps. The same treatment was continued twice a day for four days. Deodorizing irrigations of permanganate of potash, 1 to 2,000, and peroxid of hydrogen, 1 to 1, were employed for ten days. The previous destruction of tissue made the removal of the larvæ very difficult because they had penetrated to the depth of the frontal sinus and antrum on the left side. The mucous membrane and periosteum had been removed from all of the posterior bony structures, leaving them white and glistening. Some of the larvæ, when forcibly removed, tore away with them pieces of membrane and periosteum. Her recovery was slow and severe headaches persisted for a week after the last larva was removed.

CASE 4.—*History.*—P. S., white, male, age 58, occupation stone mason. He had been infected by screw-worms four years

ago. When seen he had a pronounced rhinitis, probably syphilitic, with extensive loss of the postnasal structures. He was also suffering from serious diseases of the heart and kidneys. He was a confirmed alcoholic and was presumably infected during a debauch. Aug. 11, 1905, the patient complained of severe pain in the frontal region, and said that he knew he had become infected with screw-worms as the pain was the same as when he had them before. There was a profuse serosanguineous, foul-smelling nasal discharge, and an examination confirmed his diagnosis. The injection of 25 per cent. chloroform in olive oil, however, failed to dislodge any of the larvæ. On the second day the symptoms were more pronounced. On the third day the strength of the chloroform was increased to 50 per cent. and many worms "started;" some were blown out and others forcibly removed. On the fourth day the patient complained that the chloroform solutions were not strong enough, so pure chloroform was injected with a syringe. No suffocation ensued, but an immediate intoxication like that noted followed and lasted a few minutes. This concentrated chloroform was quite effective and brought away many larvæ. This patient was treated during the intensely hot weather of August, and the flies were most persistent in their efforts to reinfect him, and even with the forceps in one nostril they would make an effort to enter the other, and were kept away only by the constant efforts of an assistant. A gray fly was removed from the nose of this patient and it was found that it did not contain "worms" but eggs as previously mentioned. On the fifth day, mosquito netting was placed around the patient's bed, but as he was delirious at times and without proper attention, reinfection occurred. The treatment was followed for a week, but the last larvæ were only removed when the chloroform vapor was thrown directly into the frontal sinuses and other spaces. This patient died from the organic heart and kidney disease five days after the last screw-worms were removed. His death was unquestionably hastened by the weakened condition and suffering caused by the parasite.

CASE 5.—Reported by Dr. J. W. Foss, Phoenix.

History.—Patient was about 40 years of age, and he complained of severe pain in the region of the ear. He had a slight bloody discharge from the nostril; but a nasal examination revealed nothing. As the pain continued chloroform was injected into the nostril and some seventeen larvæ removed. He made an uneventful recovery.

CASE 6.—From Dr. J. M. Swetnam, Phoenix.

History.—In September, 1905, a man suffering with intense pain in the head and with a sanguineous discharge from his nostrils, presented himself for treatment. Sixty-nine screw-worms were removed on the first day, most of them through his nose, but a few from the posterior nares. On the next day and the one following forty-five more were removed. The man had no further trouble.

CASE 7.—Reported by Dr. J. W. Flinn, Prescott.

History.—G. M., about 40 years of age, was first seen July 18, 1905. He complained of the agonizing pain in the right frontal region. His temperature was 101 F. and there was a thin, blood-tinged discharge from the right nostril. He had been sleeping out of doors on an old cow ranch. Pure chloroform on a swab was used with success, and forty to fifty larvæ were removed daily until nearly 200 larvæ in all had been obtained. He recovered.

CASE 8.—Reported by Dr. W. V. Witmore, Tucson. A mixture of chloroform and olive oil was used in each nostril and about fifty larvæ removed. The patient made an uneventful recovery.

CASE 9.—Reported by Dr. J. W. Coleman, Jerome, Ariz.

History.—M. G., a young man with an old diseased condition of the nose, which had destroyed the septum and turbinated bones, was attacked by screw-worms while asleep. He was seen two days later. The characteristic bloody, watery discharge was coming from both nostrils and the pain was intense. A few larvæ were taken out each day until about 130 in all were removed. He recovered.

CASE 10.—Reported by Dr. J. B. McNalley, Prescott.

History.—Mexican, male, aged 22, had a severe chronic rhinitis and had been sleeping out of doors during the summer months. He was admitted to the hospital four days after infection. He had great pain in the head, and profuse serosanguineous, foul-smelling, nasal discharge. He was treated by applying chloroform to the nostril on a swab. About 500 worms in all were removed in a period of eight days. His convalescence was rapid and uneventful.

CASE 11.—Reported by Dr. Cowlie, Kingman, Arizona, and referred to Dr. Granville MacGowan, Los Angeles.

History.—The patient had a chronic catarrh, probably syphilitic. The larvæ had penetrated the antrum, the sphenoidal and frontal sinuses. The turbinated bones were almost denuded. The patient died in great agony.

CASE 12.—This case, and also the two following were reported by Dr. Ancil Martin of Phoenix.

History.—W. S., about 65 years of age. He was a night watchman at a railroad construction camp, and slept during the day. He was attacked four days previously (June 1, 1905). He did not recognize the character of his trouble until he discovered the larvæ dropping from his nose. The larvæ disappeared under treatment on the eighth day; on the tenth day a suppurating otitis media developed. Chloroform in full strength on cotton pledgets was used. He made a good recovery.

CASE 13.—*History.*—J. R., age about 32, laborer. He was attacked by a screw-worm fly one month previously; the larvæ were present about eight days. Five days before he was seen he discovered another lot. This patient finally had a perforation of the soft palate. He also had a small area of pneumonia in the posterior surface of the superior lobe of the left lung, but he made a good recovery.

CASE 14.—Mexican, screw-worm infection of the nose. No special features. The treatment as in Case 12. He recovered.

CASE 15.—Reported by Dr. A. F. Maisch, Globe, Arizona.

History.—This patient had been on a debauch about five days before. The patient had the usual symptoms of myiasis in an exaggerated form. He was removed to the hospital, where the diagnosis was made. He was treated with chloroform instillations until no more larvæ could be found. On the second day the stupor was less and the temperature nearly normal. The night of the fourth day in the hospital the patient wandered out of the hospital and was found in a neighbor's yard. The following afternoon a new lot of very young screw-worms were found. He had been "blown" during his wandering. The patient developed an inspiration pneumonia and died.

CASE 16.—(Cases 16, 17, 20 and 21 were reported by Dr. F. R. Palmer, Roosevelt, Ariz.).

History.—G. M., Aug. 21, 1905. A fly had entered his nose and the patient said it was immediately expelled. On the third day he had severe frontal headache and epistaxis. He reached the hospital on the fifth day. The pain was severe and the odor from the nostrils nauseating. He was treated with 33 per cent. chloroform in olive oil. He recovered.

CASE 17.—J. W., July 29, 1905. Infection of nose, left side. Recovery.

CASE 18.—Reported by Dr. Coleman, Jerome, Ariz.

History.—H. H., a butcher, complained of pain in the ear and a little bloody discharge from the external auditory meatus. The small wriggling larvæ were finally detected deep in the ear at the junction of the tympanum with the canal. His external ear was filled with chloroform and a little later three dead screw-worms a trifle over a quarter of an inch long were removed. He had no further trouble.

CASE 19.—Reported by Dr. Isaac Brewer, Fort Huachuca, Arizona. Nasal myiasis. The diagnosis was made on the seventh day and the patient made a good recovery in about eight days.

CASE 20.—J. L., Aug. 13, 1905. Screw-worms in specific sore on cheek. Recovery.

CASE 21.—*History.*—P. A., white, male, age 62, occupation miner. Senile gangrene of the heel. Infected with screw-worms Aug. 25, 1905, due to slipping of the bandage while delirious. The larvæ were all destroyed by one application of chloroform, the dressings sewed on the heel, and there was no further trouble.

CASE 22.—*History.*—L. S. had a cellulitis of the wrist August 2. Hot, moist dressings were applied without result. August 3 it was incised, but no pus was found. August 5 a

screw-worm was discovered in one of the flexor tendon sheaths. Chloroform was applied and five more worms were removed. His recovery was rapid.

CASE 23.—Reported by Dr. R. D. Kennedy, Globe, Arizona.

History.—Mexican, about 25 years old. He complained of soreness in his left axilla, where he had an inflamed nodule which looked like a furuncle. On closer examination of this it was found to contain screw-worms. By applying chloroform on an applicator for a few minutes the larvæ were easily extracted. Seven were removed and a mercury bichlorid dressing applied. The patient did not return.

SUMMARY OF RESULTS.

In summarizing the results there are twenty-three cases in all, eighteen showing nasal myiasis and five myiasis of some other site. There are four fatal cases, all of them being the nasal form. Two deaths were directly due to the screw-worms, while in the other two life was greatly shortened by them. The mortality for all cases was 15 per cent. For the nasal cases alone the mortality was a little over 22 per cent. Certainly enough to demonstrate the serious nature of the disease.

In studying these cases it is seen that the patients are always attacked out of doors. The fly is probably attracted by moisture and certainly by odors. It seldom lays its eggs on normal tissue, and in the vast majority of cases the nose is the site of the attack, but any ulcerated or unclean parts uncovered by clothing are liable to attract the fly. When the eggs are once deposited the larvæ are capable of boring directly into healthy as well as diseased tissue.

SYMPTOMATOLOGY.

In nasal myiasis within twenty-four hours after the eggs are deposited there is discomfort. This gradually increases into intense pain, usually located over the frontal sinuses. This may radiate out to either temple or it may be in the superior maxillæ. There is fever, but usually it does not rise above 102 F. In severe cases delirium may be present. In nasal myiasis a bloody, foul-smelling discharge is always present. This does not contain the larvæ except in the last stages of the disease, when they are full grown and seek the earth to undergo their transformation.

The tissue attacked is very much inflamed and may present a necrotic or gangrenous appearance. The soft parts may be so completely destroyed that the bone is exposed and may even undergo necrosis. Perforation of the palate may result. Swallowing or speaking may be impossible, due to the destruction and swelling of tissue. Pneumonia may result from the inspiration of the septic discharge. Otitis media with suppuration occurred in one of the cases. It is rather remarkable that in our series there was no collection of pus found in the frontal or maxillary sinuses. This is probably explained by the fact that the sinuses are well drained by the destruction of the mucous membrane and the bones covering these openings. Also no autopsies were allowed on the fatal cases and the condition might have been overlooked. In myiasis of other regions of the body the symptoms vary according to the location, but there is usually pain, swelling and a foul-smelling discharge.

DIAGNOSIS.

The diagnosis can usually be made on the symptoms. The maggots can rarely be seen on simple inspection. In general, however, it may be said that any patient having a profuse serosanguinous, foul-smelling nasal, aural or wound discharge during the summer months should be carefully examined in a good light. If that be negative then apply chloroform in some of the forms recommended and examine immediately afterward to see if that will not bring the parasites to light. Even if the larvæ are seen they can not be successfully removed without the use of chloroform, since when they are not under its influence they will wriggle away and bury themselves deeper in the tissues on the slightest touch.

TREATMENT.

The method of treatment in all these cases collected from all parts of Arizona has been the same, chloroform, differing only in the method of its administration. In this disease the nose seems to have an unusual tolerance for chloroform and other strong antiseptics. This is probably due either to the destruction of the Schneiderian membrane or to its inactivity from the severe congestion.

Our best results have been obtained by spraying chloroform, in varying strengths from 25 per cent. to the pure drug, from a metallic syringe with a "spray tip," ejecting the chloroform with considerable force up into the nasal chambers and, if possible, their accessory sinuses. Olive oil is used to dilute it when necessary. When the chloroform is applied it should be followered by an immediate search for larvæ, using a good light, head-mirror, a nasal speculum and "alligator" forceps. This should be repeated twice a day until all the larvæ are removed. Irrigations of 4 per cent. boric acid or potassium permanganate, 1 to 4,000, should be used in addition as often as necessary to keep the nose clean. The pain is usually sufficient to require morphin for its relief. The chloroform may be applied to accessible positions on a swab or compress and its distribution is then more easily controlled than when it is sprayed in with a syringe.

The prevention of this disease is much easier than its cure. A chronic rhinitis or otitis or even uncleanliness attracts the female fly, as does also any exposed wound or ulcer, and personal uncleanliness seems to cause some of the attacks. Sleeping in the open air gives the fly an opportunity to deposit its eggs. The disease may be easily avoided by the proper care of the nose, ears and throat and all wounds or contusions, and cleanliness. Also one should not sleep out of doors during the daylight hours of the summer months unless properly protected by netting.

DIFFERENTIAL DIAGNOSIS BETWEEN MEASLES AND RUBELLA.*

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OMAHA.

That measles and rubella are separate and distinct diseases is now an accepted fact; that many physicians fail correctly to differentiate in their diagnosis of these two diseases is also equally true.

In taking the history of cases errors frequently occur because of this failure to diagnose properly. So true is this that when I ask whether a child has had measles I also enquire as to the symptoms. As the two diseases present a different clinical course, it seems to me that in the interest of exact science the correct distinction should be made. For this reason I present this brief paper for consideration.

In the spring of 1894 there occurred an endemic of

* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

rubella, or German measles, in Omaha. I had the opportunity to observe and study a number of these cases. I made notes of twenty-seven cases in which I had the opportunity of seeing the patients one or more times. At about the same time measles was endemic, so that the two diseases could be studied in contrast. In three cases I had the privilege of seeing each disease in the same patient within an interval of a few weeks.

In measles the following predominant symptoms are usually present: Cough in some form is never absent, and usually it is characteristic, being sharp and croupy. Conjunctivitis in some degree is nearly always present. The fever during this period is intermittent in type. Pharyngitis is always present; it varies in the different cases, but is usually different from the ordinary pharyngitis in that the mucous membrane covering the soft palate is injected and patches of deeper color may be noted. During this stage Koplik's spots are present. Since noting this symptom I have seldom failed to find them. However, as all know, it requires a strong light and careful inspection of the mouth to discern them.

During the prodromal period these symptoms vary in degree; sometimes they are so severe that the patient is confined to bed, sometimes so slight that the child is up and about until the eruption occurs, but when slight a careful inquiry will usually elicit a history of their presence for from three to five days preceding the rash. The rash in measles is a maculo-papular eruption, beginning first on the forehead and face and requiring from twenty-four to forty-eight hours to become distributed over the body. The papules are at first discrete, then becoming larger they arrange in crescentric form covering considerable areas of skin, but always leave irregular patches of normal skin. This rash usually begins to fade on the third day, but requires a longer time in fading than the rash in rubella. It usually leaves a slight amount of pigmentation. This is more noticeable in children of fair skin. In some children for a number of days this pigmentation may be observed when the child cries. In measles the greater the amount of rash the higher the temperature, so that a temperature of 104 F. is not uncommon during the height of the efflorescence. Not so in rubella.

In rubella the prodromal symptoms are always slight. In at least one-half of my cases they were not noted, the appearance of the rash being the first symptom to attract attention to the patient. In the cases I saw the throat was generally slightly reddened, but the Koplik spots were always absent from the mouth. Now Koplik spots are of value as a diagnostic symptom only during the prodromal stage, so that when the child is seen only after the appearance of the rash the diagnosis must be based on the other symptoms. In those cases in which the patient was seen before the appearance of the eruption I was able to make out enlarged post-cervical glands. These were tender to the touch. In three cases also there was an enlargement of the inguinal and axillary glands. The rash in rubella is at first papular, beginning about the lips and cheeks and rapidly spreading over the body, so that within twenty-four hours the entire eruption has appeared. In measles the eruption is always longer in becoming fully developed.

The papules in rubella are more discrete than in measles, also more of a pinkish color. In measles during the period of eruption the fever is almost never less than 103 F., in rubella I have never known it to be higher than 101 F. The rash in rubella fades more promptly than in measles. In many cases, often on the second day and always by the third, the rash had entirely disappeared. It does not leave the pigmentation that is often present in measles. In but two cases did I observe the erythematous form of rash and in these the general redness soon faded, leaving the papular eruption. In all of my cases I could make out the post-cervical glands as being enlarged and tender, and in some of these cases the glands in the axilla and groin were appreciably enlarged. In rubella these glands are felt at the time of eruption and even before its appearance, whereas in measles, scarlet fever, etc., the glandular enlargement usually occurs after the development of the eruption. I look on this symptom as the most valuable one in the diagnosis of rubella.

In not one of my cases were there any complications following rubella. My patients were kept in bed for two or three days on a light diet, when recovery would be complete.

In one patient, a little boy of 8 years, the glands remained enlarged and tender for several days. The only treatment required is to keep the patients in bed, place them on a light diet, and regulate the bowels.

In conclusion the important points of difference between measles and rubella are the marked prodromal symptom of measles and the presence of the Koplik spots on the inside of the lips and cheeks during this stage. The character of the rash in measles is more confluent and requires a longer time for its appearance; it also fades more slowly. Lastly there is the possibility of complications following measles.

In rubella the prodromal symptoms are slight or absent. The rash appears and distributes itself more rapidly over the face and body; it also fades more promptly, so that by the third day it has disappeared.

There are undoubtedly border-line cases between these two diseases in which it is not possible to say, with absolute certainty, whether the case be one of measles or rubella, but as a rule a careful examination of the patient and a study of the symptoms will usually lead to a correct differential diagnosis.

DISCUSSION.

DR. E. W. MITCHELL, Cincinnati, Ohio, called attention to one differential point, an exceedingly fine, papular, rose-red eruption seen on the soft palate for 24 hours preceding the skin eruption. He has found this eruption present in nearly all the cases he has had the opportunity to see at the proper time, and believes it to be a diagnostic sign of considerable importance. Two signs, the one mentioned and the finding of enlarged postoccipital glands, have in his experience been valuable differential signs. The difficulty, he said, in separating rubella from measles, on the one hand, and mild cases of scarlatina, on the other, is sometimes great. This was impressed on him a few years ago. Of three children in one family, two had an exanthematous disease in which the eruption was suggestive of rubella rather than of scarlet fever. The symptoms were mild, and he was disposed to make a diagnosis of rubella, largely because an extensive epidemic was prevailing at the time. It was only when desquamation began that it was possible to make a positive diagnosis of scarlet fever.

DR. C. A. EARLE, Des Plaines, Ill., stated that he finds that the more one studies these exanthemata, the more perplexing is their differentiation. Atypical cases shade so gradually, that unless all the surrounding circumstances are considered and the cases followed from beginning to end the diagnosis is well-nigh impossible in some cases. He observed 27 cases of rotheln in a boys' school during February and March of this year. The prominent features of almost all of these cases were: First, suddenness of onset; second, absence of premonitory symptoms or catarrhal symptoms; third, the rash was a maculo-papular eruption, beginning on the fore-

head and face, almost as soon on wrists, was rapidly spreading to trunk and thighs. The macules were present on the mucous membrane of the mouth. Only one case desquamated. Temperature, 99 to 100 degrees, one case, 103 degrees. The eruption consisted of pin to split pea sized macules, which could be felt by passing the hand over the skin. As they disappeared there remained for several days the bluish discoloration of skin which is always seen in measles. From a study of these cases, he thought, one might say that rotheln is measles without the catarrhal manifestation of that disease.

DR. S. J. WALKER, Chicago, asked Dr. McClanahan if he does not put some significance on the presence of the diazo reaction in measles and its absence in rubella.

DR. H. M. MCCLANAHAN, Omaha, Neb., replied that in only three cases were there erythematous rashes. He remembered seeing those that looked like scarlet fever, but a papular appearance came on later. These children had had German measles before. There is, he said, very little difference between the mild scarlet fever and rubella rash. The diazo reaction was not carried out. The results quoted were based on observation rather than on research.

DENGUE FEVER,

AS OBSERVED IN BROWNSVILLE, TEXAS, IN AUGUST, 1907.

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WASHINGTON, D. C.

The city of Brownsville lies on the left bank of the Rio Grande, about ten miles from the mouth. It has a population locally estimated to be about 8,000 (6,305 according to the census of 1900), of which a large portion is Mexican.

The city has no public water supply, in consequence of which river water is hauled in water carts and kept in barrels and tanks and is in very general use for all purposes, except by the better-to-do portion of the population, which obtains its drinking water from the rain water of cisterns. These water receptacles serve, of course, as excellent breeding places for the *Stegomyia calopus* and the *Culex pipiens* mosquitoes, both of which were very much in evidence.

Although there is no sewerage, the natural drainage into the river is sufficient to carry off the storm water rapidly, so that we observed no stagnant water in gutters or puddles.

The city is a port of entry, but its domestic shipping is insignificant and its foreign practically *nil*. One railroad enters from the north, giving it direct communication with Corpus Christi, Galveston, Houston, San Antonio and a number of small towns.

Directly opposite, on the Mexican side of the river and connected with it by ferry, is Matamoras. Through Matamoras Brownsville has daily railroad communication with Monterey, Mexico.

It seems probable that dengue was introduced into Brownsville from Mexico. The first case of which we have knowledge occurred about June 20, and, as this was in all probability at least a secondary case, it seems fair to assume that the disease must have been introduced not later than about the middle of June. The disease spread rapidly and became pretty generally diffused through the population so that in two months, or about the middle of August, it was estimated that there had occurred about 1,000 cases.

Our notes do not comprise a very large number of cases, but they cover all classes of the population, so that we believe that the following description is fairly representative of the disease as it prevailed.

INCUBATION.

We have only one observation relating to the period of incubation. Three members of a family of four were taken sick in a little less than six days after their first exposure, so that their incubation period was not more than six days.

ONSET.

Without any well-defined prodromal symptoms in any of the cases, the disease was ushered in somewhat abruptly, though not with the suddenness which has been described as occurring in some epidemics, with general malaise, headache and more or less generalized aching. In a few instances a slight chill or chilliness was noted.

PAINS.

Pain, in the form of headache with or without rachialgia, lumbar pain, aching of the limbs and eyeache, was a constant symptom. More or less severe aching of the eyes was almost always associated with the headache; the latter was usually frontal and present in almost every case. The eyeache was frequently accentuated by causing the patient to look up or down or to one side.

Severe aching in the scapular regions was complained of in many cases. We noted no involvement of the joints in any of the cases observed by us. Some of these pains or aches frequently marked the onset of the disease; slight at first, they rapidly took on in severity, causing restlessness and sleeplessness. The degree of severity of the various aches and pains and the associated restlessness and discomfort oscillated with the oscillations in the fever; thus with a remission in the fever there would be a more or less marked remission in the pains and the patient would feel much better. In most cases the final defervescence of the fever marked the disappearance of all the aching and pains. In a few cases, however, some aching, particularly of the eyes and lumbar region, persisted for some days into convalescence.

FACIES.

In a considerable number of our cases there was for two or three days after the onset a more or less marked flushing of the face; there was, however, nothing distinctive about this and it did not merit the name of "the initial rash." The eyes in most instances showed some congestion; in one case large subconjunctival hemorrhages occurred in one eye on the third, and in the other on the fourth day.

SKIN.

The skin was warm and generally moist; in a few cases there was mention of profuse sweating at night. In one instance we noted a profuse critical sweat on the fifth day. In a little more than half of our cases a more or less marked eruption was observed. It is believed that this proportion would have been greater had we been able to follow all our cases as closely and as long as is desirable. The eruption appeared some time between the third and sixth day, that is, (1) during the course of the fever, (2) at the termination of the remission of the third day, or (3) at the termination of the fever. The character of the eruption in most instances was somewhat like that of measles, in some scarlatiniform, and in a few there was observed mixed with the measle-like macules roseola-like patches of various sizes.

This rash differed in different cases with respect to the extent of surface involved. In some there were only a few round maculo-papules on the back of the wrist and hands, in others it covered the dorsal surfaces of the forearms, elbows, legs and dorsal aspects of the feet, while in still others it covered the whole body except the face, palms and soles. In the last group the eruption was usually quite profuse, leaving but little skin uninvolved. The duration of the eruption varied in our experience from twelve hours to two or three days. In two of our cases there was associated with the eruption considerable pruritus. In most instances the eruption disappeared without any obvious desquamation. In a few there was more or less desquamation, which was flaky in one case.

On the second day, in one of our cases, there appeared on the dorsal aspect of the left forearm a diffuse dull redness of the skin, suggesting a sunburn in appearance. After a few hours it began to fade, while simultaneously a similar redness appeared on the dorsal aspect of the right forearm. After twelve hours all signs of what appeared like a dermatitis had disappeared. The definite eruption appeared in this case on the sixth day with the return of the temperature to normal.

PULSE.

With the rise in the temperature the pulse beat increased in frequency, and in most instances continued to rise and fall in harmony with the rise and fall of the temperature.

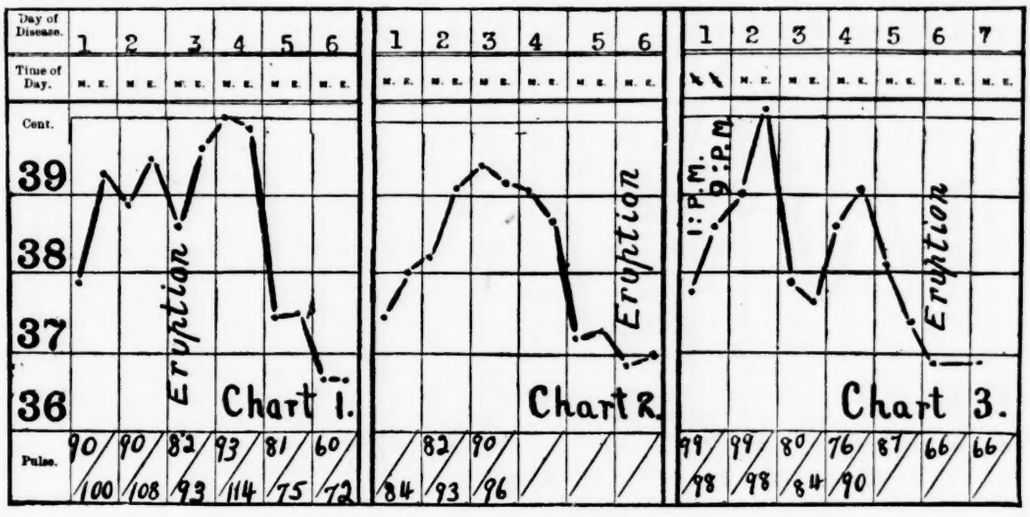
In one case (Chart 3), although the temperature rose progressively during the first two days, reaching 104.2 F., the pulse remained stationary at 98 to 99. We met no example of the typical Faget's sign, i. e., a falling pulse rate with a stationary or rising temperature.

RESPIRATORY TRACT.

One of our patients spoke of a feeling of fulness and tenseness in the nostrils. In four cases there was bleeding from the nose; slight in three, profuse in the fourth. We observed no catarrhal symptoms nor any notable deviation from the normal in the respiratory movements.

BLOOD.

Examination of blood smears stained by Wright's method showed no structures which we could interpret as parasites of etiologic significance. The circumstances under which we were working and a lack of time did not permit us to make either erythrocyte or leucocyte counts.



Temperature in cases of dengue.

LYMPHATIC GLANDS.

We noted enlargement of the lymphatic glands of the groins in three cases, in one of which there was also some enlargement of the right epitrochlear glands. The glands were discrete and neither tender nor painful.

TEMPERATURE.

With the onset of the disease the temperature began to rise and continued to rise with or without morning remissions for two, three or four days. Having attained its maximum it at once began to decline, slowly in some instances, rapidly in others, usually reaching normal by the fifth or sixth day. In some instances the defervescence was abrupt—critical—and in one instance associated with a very profuse sweat. In a considerable proportion of cases the morning remission of the third day was particularly marked, almost amounting to an intermission, and remained for from three or four to twenty-four hours, after which the temperature again rose, and in one of our cases reached the highest point recorded in that individual's attack. The highest temperature recorded by us was 104.2 F. (40.1 C.) (Charts 1, 2 and 3).

HEMORRHAGES.

Reference has already been made to the occurrence of epistaxis and subconjunctival hemorrhages. In one of our cases the menses of a woman who had always menstruated at regular intervals appeared five days before the expected time and were uncommonly profuse.

DIGESTIVE TRACT.

The gums varied somewhat in appearance; usually they were somewhat reddened, and in one instance there was a tendency to bleed on manipulation, but this was normal for the individual in question.

The tongue was commonly moist and more or less coated over the dorsum, not infrequently showing red edges and tip. In a few instances there were some patches of congestion of the mucosa of the soft palate.

The appetite was usually dulled and in some instances altogether lost. In the latter stages of the disease there was developed in some instances a desire for food, but an attempt to eat it would evoke a feeling of repulsion. Thirst, more or less marked, was almost invariable. In some cases there was nausea, and in a few instances vomiting, which in no case was severe. The vomited matter

usually consisted of a watery fluid which was bile stained in some instances. In three cases, all of them children, there was vomiting of a fluid containing some black particles like coffee grounds; in these cases there had been bleeding from the nose, and this peculiar "black vomit" was interpreted as blood which, having its origin in the posterior nares, was swallowed and became altered by exposure to the gastric juice.

A tendency to constipation, perhaps explainable by the enforced inactivity of the patient, was noted in all cases, but the bowels responded readily to the action of cathartics.

URINE.

We examined the urine with heat and nitric acid in ten of the more severe cases, but found no albumin in any of them. Except in one instance, however, it was not practicable for us to obtain specimens after the fourth day of the disease. In this case, one of cyclical albuminuria, the fever, instead of causing an increase in the albumin, seemed to affect it favorably, for daily examination throughout the attack failed to reveal the presence of even a trace.

LIVER.

Of symptoms referable to this organ we saw jaundice in one case. This, however, was a mild catarrhal icterus in the course of which the patient was attacked with dengue.

NERVOUS SYSTEM.

Aside from pain, which has already been discussed, we must mention the occurrence of insomnia in several instances, the latter being not uncommonly the result of the former. Following the fever more or less marked adynamia was noted as the rule.

RELATION TO PREVIOUS ATTACKS.

A number of cases gave histories of a previous attack of dengue.

RELATION TO PREVIOUS ATTACKS OF YELLOW FEVER.

At least two of our cases had had yellow fever some years before.

IDENTITY WITH THE DENGUE OF THE PHILIPPINES.

The disease observed in this epidemic corresponded in general with dengue as observed by one of us in the Philippine Islands. In the Philippines, however, hemorrhages were not observed in any case. Enlargement of the lymphatic glands was rather more common in cases seen in the Philippines than in the Brownsville cases.

DIAGNOSIS.

In the presence of an epidemic this was not difficult. cases) appearing after the third day of the disease in The combination of an acute fever lasting five or six days with pains having the characters mentioned, with a polymorphous eruption (in at least 50 per cent. of the the absence of catarrhal symptoms, jaundice and albuminuria clearly marked this fever out as dengue. The absence of catarrhal symptoms and the character of the eruption excluded both grip and measles. Yellow fever, the only disease that demanded serious consideration, we excluded on account of the eruption which was present in at least 50 per cent. of the cases, and the absence of both albuminuria and jaundice in cases in which, on account of the degree and duration of the fever, these symptoms would certainly have been present had these cases been yellow fever.

Clinical Notes

ANTERIOR POLIOMYELITIS.

REPORT OF CASE IN THE PRESENT EPIDEMIC.

J. M. WARD, A.M., M.D.
OIL CITY, PA.

Patient.—Oct. 26, 1907, I was called to see J. L. A., a school boy, aged 9. He was a healthy child, having escaped the usual diseases of childhood. His parents are living and well; the family history is good.

Present Illness.—Tuesday, October 22, at bed time, he complained of slight pain in his right ankle, which his mother attributed to a probable slight sprain acquired while gathering chestnuts with the other children after school. The next morning, Wednesday, he was rather feverish, vomited, wanted nothing to eat, but was thirsty and complained of pain in both arms, both legs and especially in his back. His mother gave him a dose of castor oil and kept him in bed. As there was no improvement, she sent for me Saturday morning.

Examination.—I found him with temperature 102, pulse 96, respirations 24. He was lying with his back to the light, the pupils were somewhat dilated, there was slight photophobia. The tongue was slightly coated; there was no sore throat. There were a number of pustules resembling chickenpox—not itchy, however—scattered over his abdomen, chest, back and several on his neck. The pain in his arms, legs and back was increased by pressure or motion. His abdomen was neither tender nor distended. He had vomited twice since the onset. The left knee jerk was slight, the right much diminished. There was no ankle clonus; wrist drop was marked on both sides; legs and toes were extended, and both feet rotated outward; there was inability to draw either foot to the body.

Treatment.—Directions were left to keep him quiet; a pillow was placed in position to hold the feet at right angles to the legs. Soft diet was ordered; a tepid sponge bath and all the water he wanted to drink. Fractional doses of calomel and a few spoonfuls of a solution of aconitin in water.

Course of the Disease.—Twenty-four hours later, Dr. N. A. Thomas saw him with me in consultation and concurred in the diagnosis of acute anterior poliomyelitis, also in the treatment and in the prognosis of complete recovery with the probable exception of the anterior tibial, and the peroneal muscles of the right side; the other paralyses having already cleared up except a very slight affection of the left rectis formis. The next day all symptoms had practically disappeared except the pronounced paralysis of the right leg. At my next visit three days later and ten days after the onset, the boy met me at the door, walking with but a just perceptible limp.

During the past few weeks an epidemic of this disease has prevailed in this vicinity—over fifty cases reported—of which the above is probably a fair type. On comparing these cases with the classical picture drawn by Osler and others, several important differences present themselves: The predominance of sensory symptoms; advanced age; vomiting; rash; short duration of paralysis, and many apparently complete recoveries.

In the discussion of this subject at a recent meeting of the Academy of Medicine of this city a report of a number of cases of cerebrospinal fever, also of several cases of multiple neuritis occurring at the same time and place, seems to indicate that the infection is due to a germ which expends its force on different parts of the cerebrospinal system, with effects, classified according to the portion affected, as cerebrospinal fever, bulbar paralysis, Landry's disease, multiple neuritis or infantile palsy. All the cerebrospinal cases, including one patient 26 years of age (in whose case the diagnosis was anterior poliomyelitis), and two or three of those that were diagnosed infant palsy, proved fatal. In some of the worst cases examination of the cerebrospinal fluid by the state authorities gave negative results. The only treat-

ment of any avail, and even that of questionable utility, was thorough cleaning out of the alimentary canal, accompanied with mild febrifuges and good hygiene. Diphtheria antitoxin has not been tried yet, and the epidemic is of too recent date for any particular benefit to be derived from the application of electricity.

In accordance with a custom of this vicinity, no postmortems in this class of cases are performed.

VOCAL FREMITUS IN LARGE PLEURAL EFFUSIONS.

W. J. CALVERT, M.D.
COLUMBIA, MO.

Vocal fremitus is usually diminished or absent in pleurisy with effusion. In the literature at hand, fremitus in large effusions is rarely mentioned.

History of Case.—In a young adult, white, male, with suspected left-sided pleurisy, examination revealed increased vocal fremitus and bronchial breathing throughout the left side. After withdrawing 1,500 c.c. of fluid, an absence of vocal fremitus throughout the left side was noted. After several tappings practically all the fluid was removed. During this time vocal fremitus gradually returned, but was less than normal when the patient was discharged.

Arneth,[1] in his paper on Vocal Fremitus in Croupous Lung Inflammations, says that the increased tension of the thoracic wall can not prevent the fremitus, because in pleurisy with large effusions and much pressure the fremitus is often increased.

Lax elastic membranes absorb vibrations, but when sufficiently tense transmit them. In this case the mediastinal membranes were tense and transmitted the vibrations of the trachea and large bronchi to the thoracic wall. When the tension was removed from these membranes by withdrawing 1,500 c.c. of fluid the vibrations were absorbed before reaching the thoracic wall, when vocal fremitus was lost, as is usual in pleural effusions.

It may be said that in pleurisy with effusion vocal fremitus is diminished or absent; it reappears, intensified, when the pressure of the fluid is sufficiently high; disappears when the tension is reduced, and gradually reappears as the fluid is removed or absorbed.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*For a list of all accepted articles, see advertising page 22.*)

CORYFIN.

ETHYLGLYCOLIC ACID ESTER OF MENTHOL.

Coryfin, $CH_2(O \cdot C_2H_5) \cdot COO(C_{10}H_{19}) = C_{14}H_{26}O_3$, is the ethylglycolic acid ester of menthol.

It is prepared by the action of ethyloxyacetyl chloride on menthol. Coryfin is a limpid, colorless oil, having a very faint menthol odor. It boils under 20 mm. pressure at about 155° C. (311° F.) and is soluble in alcohol, ether, and chloroform; difficultly soluble in water.

When heated with caustic alkalies it is split up into menthol and ethylglycolic acid. When incinerated on platinum foil it leaves no residue. Aqueous solutions must not have an acid reaction and must be free from chlorine and sulphuric acid.

Actions and Uses.—Soon after its application to the skin or mucous membranes a cooling effect is produced, said to be due to the splitting off of menthol, to which the pharmacologic actions of the remedy are to be ascribed.

Coryfin is said to be useful as a substitute for menthol in nervous headaches, coryza and conditions of hoarseness and pharyngeal irritation.

Dosage.—In headache it may be lightly rubbed in or painted on the forehead, avoiding contact with the eyes; in coryza it may be applied to the mucous membrane with a brush or as a spray. In throat affections a few drops (3 or 4) may be placed on a lump of sugar and allowed to dissolve in the mouth, or mixed with tepid water and used as a gargle.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 836914. U. S. trademark No. 43416.

NOVASPIRIN.

METHYLENE-CITRYLSALICYLIC ACID.

Novaspirin, $C_{21}H_{16}O_{11}$, is methylene-citrylsalicylic acid.

Novaspirin is prepared by the action of methylene citric acid dichloride on salicylic acid.

Novaspirin is a white, odorless, crystalline powder, having a faint acidulous taste. It is easily soluble in alcohol, difficultly soluble in chloroform, ether, and scarcely soluble in water. It contains 62 per cent. of salicylic acid.

On heating with caustic alkalies salicylic acid is generated. On prolonged standing with water and more easily with alkalies it is split up into its components. When heated in a test tube it melts with the generation of formaldehyde. On adding dilute acid to the warm alkaline solution, white crystals of salicylic acid are separated.

Actions and Uses.—Novaspirin is not decomposed in the stomach and is said to be non-irritating to that organ, but it is broken up in the intestine into salicylic acid and methylenecitric acid.

It is said to be useful in influenza, coryza, tonsillitis, rheumatic conditions, gout and neuralgic conditions.

Dosage.—1 Gm. (15 grains) several times daily.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 858142. U. S. trademark No. 62613.

(*To be continued.*)

How to Expose Every Inch of Surface in a Room to the Sunlight.—A French architect, A. Rey, has been making a special study of building houses to conform to the strictest hygienic requirements. THE JOURNAL has summarized some of his communications in which he proposed a number of innovations which would revolutionize the present system of building apartment houses, flats, etc., to secure the maximum of light and air without waste of space. In an article in *Hygiène Générale et Appliquée* for October he gives illustrations and diagrams claiming that it is possible to have the rays of light entering the window refracted or reflected in such ways as to cover every inch of floor and wall surface. This is accomplished by making the windows larger, and by having the ceiling merge into the rear wall in a long curve, starting about the center of the ceiling and gradually curving into the rear wall, the curve finishing at a point about three-fourths of the distance between ceiling and floor. This tangential curve reflects and refracts the rays of light, according to principles frequently encountered in nature for the reflection of light by means of curved surfaces, as he explains.

1. Münch. med. Wochschr., 1906, liii, p. 819

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[*For other information see second page following reading matter.*]

SATURDAY, DECEMBER 7, 1907.

COMMERCIAL BIAS AND SCIENTIFIC EXACTNESS.

A few months ago[1] we published an article in which Dr. Robert A. Hatcher gave the results of some experiments made at the Loomis Laboratory, New York, in which chloral hydrate and isopral were compared. Hatcher called attention to the fact that the use of isopral is largely based on the reports of investigations of Dr. Impens, whose figures purport to show the greater safety of the proprietary article, isopral, over the official hypnotic, chloral hydrate. We publish in this issue a reply by Dr. Impens. The tone of this reply was so unusual that before publishing it we submitted it to several pharmacologists. They suggested that if published its publication should be accompanied with explanatory and critical comments, since the average reader in this country would not be apt to know the actual facts regarding the literature, as it is practically all in French or German. As one who is not only impartial, but who is also thoroughly acquainted with the subject, we asked Dr. Reid Hunt to write a reply, which he has done. The Impens article and Dr. Hunt's reply appear in this issue.

A careful perusal of both papers will show that Impens' quotations are misleading; that the published results do not justify the claims that isopral is markedly more safe than chloral; and, in short, that his conclusions are not trustworthy. His treatment of Hatcher's paper is highly unfair. There can be no doubt that Hatcher's experiments suffice to show that Impens' claim for the superior safety of isopral is, at best, open to question, although they are not in themselves sufficiently extensive to decide the question in the negative. These objections can only be met by further experiments and not by abuse and distortion. The natural enthusiasm of Dr. Impens, as the discoverer of the hypnotic quality of isopral, and as an employé of, or at least as directly connected with, the manufacturers, the Farbenfabriken of Elberfeld Co., must have clouded his scientific judgment and inhibited his critical faculties or he would not hold so strongly to the position which he has taken.

The bright side of such discussions is that biased statements emanating from manufacturing houses are no longer accepted in blind faith, but are being put to the test of independent experiments by competent investigators. This is distinctly a new spirit and a sign of better things. The work of checking the claims of manufacturers is highly unsatisfactory and unprofitable to a scientist and can only be prompted by a high sense of duty. For this reason such work as Hatcher's is to be encouraged; we need more of it. A scientist could scarcely be expected, however, to undertake such a task so long as his results, if favorable, would be subject to biased quotation for advertising purposes, and if unfavorable, laid him open to personal abuse and highly-colored refutations on the part of those manufacturers (we speak in general terms and do not refer to the firm here concerned) who pursue the narrow and short-sighted policy of exaggerating every slight and doubtful advantage of their remedies and suppressing all unfavorable reports by dint of vilifying and shouting down all those who dare to raise a voice in protest. The resources of these manufacturers, and the former indifference of the medical profession, prevented a fair hearing and made the task of an independent and impartial investigation thankless and useless.

Times have changed, however. The advent of the Council on Pharmacy and Chemistry, the interest which its work has aroused and the sentiment which it has served to focus, now assure a fair hearing to both sides, and it is to be hoped that Hatcher's work is merely a beginning and that he and others will not be discouraged from its continuance. The far-sighted manufacturer, if serious in his claims that he honestly wishes to advance therapeutics, should be only too glad of these controls on the work of an often overenthusiastic staff. Such control may at times put a temporary check on the financial returns, but in the long run the interests of the manufacturer and of the public and the medical profession will be better served by a thorough and unbiased search for real advantages in new remedies than by any amount of imagination.

To return to isopral, it would be better to elaborate a field for its undoubted difference from chloral, its much more prompt action, and not to push the highly dangerous claim of greater safety, until this is backed by altogether unquestionable experiments and reasoning.

The discussion further emphasizes a fact too often lost sight of, namely, that experimental work of a scientific character is seldom performed consistently and impartially by an individual whose interest in the article investigated is other than purely scientific. An atmosphere in which there is even a suspicion of commercial or proprietary interest is very unfavorable to the calm, unbiased and impartial spirit which should permeate all truly scientific work.

1. THE JOURNAL A. M. A., June 1, 1907, p. 1849.

TYPHOID TREATMENT WITH BACTERIAL PRODUCTS.

Recently Richardson[1] reported on his work carried on during the last eight years on the treatment of typhoid fever with specific serum and with material obtained

1. Massachusetts Medical Society, 1907.

from cultures of typhoid bacilli. The latter method is similar to the specific inoculations introduced by Sir Almroth E. Wright. Richardson, however, as well as Petruschky, independently hit on the same idea and inoculated typhoid patients with typhoid material in order to hasten the reactions that lead to cure. The antityphoid serum used by Richardson in thirty-five cases was obtained from horses that had been injected for from one to two years with gradually increasing doses of killed cultures of typhoid bacilli in broth. This treatment did not seem to have any distinct curative effect, and apparently increased rather than decreased the tendency to relapse.

In a second, larger series of cases a filtrate obtained by passing broth cultures through porcelain filters was used, in doses averaging 3 c.c. daily, injected subcutaneously. These filtrates exerted a marked effect on the course of the typhoid process; in many instances chills, rise of temperature and pulse occurred, followed by a fall and general improvement. While the nature of these reactions is still unknown, they resemble certain phenomena seen in the natural course of the disease and may be tentatively explained as due in part to sudden increased destruction of typhoid bacilli in the body, with resulting increase in the symptoms of intoxication, and in part as the direct result of the substances introduced. Light might be thrown on this problem by careful study of the content of the blood serum in agglutinins, opsonins and lysins for typhoid bacilli.

In a third series the patients were treated with the so-called nontoxic residue of the typhoid bacillus, prepared by Professor Vaughan of Ann Arbor, in subcutaneous daily doses of from 2 to 10 c.c., and in another series it was attempted to prevent relapses by the continued inoculation of this residue at intervals during convalescence. The statistical figures indicate that injection of the nontoxic residue continued into convalescence largely eliminates the relapse in typhoid fever. Of course observation of a much larger series of cases must be made in order to establish this claim. Among the other facts noted by Richardson it may be worth mentioning that this nontoxic residue appears to make the typhoid process longer but milder. It also is clear that the best results are obtainable in the patients who come under treatment as early as possible in the infection, and the fact that an early diagnosis in typhoid is often impossible places a severe handicap on specific treatment in this disease.

It is to be hoped that the work will be continued under favorable conditions and that study may be given at the same time to the finer reactions that occur in the patients. Furthermore, it is also desirable that special attention be given to laboratory methods necessary in order to establish the diagnosis on a definite etiologic basis at the earliest possible moment, and at present the best special method for that purpose would seem to be blood cultures. This is indeed rendered essential by the fact that in order to obtain reliable information regarding the effects of treatment with killed bacilli and bacillary products one is forced to differentiate carefully between cases of typhoid and paratyphoid fever.

THE ARCHIVES OF INTERNAL MEDICINE.

As was announced two weeks ago, there will be issued next month, under the auspices of the American Medical Association, the first number of the *Archives of Internal Medicine*, a journal devoted to the publication of articles relating to internal medicine which are too technical or too elaborate for a journal of general circulation.[1]

This periodical will not conflict with other publications now in existence. Such journals as the *American Journal of Physiology*, the *Journal of Experimental Medicine*, the *Journal of Infectious Diseases*, the *Journal of Biological Chemistry*, etc., have a special field, each to itself and each appeals only to those especially interested in that particular field. They are not intended for the physician engaged in active practice, for much of the matter they contain is of only indirect interest to him. But all of them occasionally contain articles that relate to clinical medicine, which should be placed within the reach of clinicians. The *Archives* will be, as it were, a connecting link between these technical journals—representing special work so far as it relates to the internist—and medical journals in general, for which such matter would be too technical, too theoretical or too experimental in character.

The great activity in pure scientific research in the fields of physics, chemistry and biology that has set in during the past decade or two has resulted, and is resulting almost daily, in discoveries that may or may not be turned to practical account in medicine. These discoveries may be at first theoretical or experimental; time alone will prove whether or not they will be of practical value in the prevention, diagnosis or treatment of disease. At present the clinician who would keep in touch with advances in scientific investigation which may be of value in practical medicine must read a number of special journals. But many of the most ambitious and most progressive clinicians have neither the time nor the inclination to wade through all these for the sake of obtaining the occasional article which relates to that in which they are interested; and there are few who would care, even if they could afford, to invest in all of them. It is of the first importance that as much as possible of such advances shall be placed before as many as possible of the more intelligent clinicians—by far the greater number of whom are not fortunate enough to be located in the great centers of population where intimate contact with the actual workers in research causes rapid diffusion of knowledge. There has

1. See advertising page 21.

never been a time when there was a larger proportion of the profession more earnestly devoted to its scientific aspect than is the case to-day of men who want to keep in touch with the most advanced work, who are capable of judging and who want to judge for themselves of the correctness of this theory, or the value of that experiment, and the deductions derived from it—men, in other words, whose scientific attainments are limited not so much by their inclinations and their capacities as by their environments. It is to just such men as these that the *Archives* will be indispensable.

It is perhaps unnecessary to state that the *Archives* is not a business venture; if the circulation makes it possible to decrease the present subscription price the reduction will be made. The motive which prompts its publication is solely the advancement of scientific medicine in the United States.

THE ASSOCIATION'S AID TO LIBRARIES.

Since the American Medical Association began its campaign of reform against frauds in proprietary medicines, it has been the fashion for medical journals which receive the bulk of their support from interests that this work is jeopardizing, to attack the Association and those connected with it on every possible occasion. It has not been thought worth while to reply to these general attacks, no matter from what source they emanated, as the animus has been too apparent to deceive any intelligent physician. When the criticism becomes specific instead of general, however, it is occasionally worth while to state facts.

In the last number of a monthly medical journal appears the following:

"The animus of THE JOURNAL of the American Medical Association—of the present rulers of it—could not be better illustrated than in its action toward the Association of Medical Librarians. The librarians are engaged in a serious, unselfish and needed attempt to forward scientific and literary medicine. But, of course, such an aim is not popular, and so the so-called "leaders" have no interest in the movement. Hence THE JOURNAL of the American Medical Association does not aid the librarians, and even cuts off the gift of THE JOURNAL to its membership libraries. The Association of Librarians gets more sympathy and help from the independent medical journals (which THE JOURNAL of the American Medical Association is trying to kill) [*sic*] than from the rich journal supported by the great body of the medical profession. When the profession tires of this sort of abuse, and of many abuses of a similar kind, it will demand a very different policy from those who now misrepresent it. But will it ever tire? Or when it does, may it not be too late? It seems to have created a Frankenstein."

The journal in which this appeared has such a small circulation that it would hardly be worth while to notice this particular attack if it were not for the fact that the editorial will be copied, of course, by those journals —medical and lay—that print everything obtainable that seems to reflect on the American Medical Association. What are the facts?

When the request of the Association of Medical Librarians—that THE JOURNAL be sent free to all its members—came before the Board of Trustees for action about a year ago, an examination of the list of libraries obtained at that time showed that the membership of the Association of Medical Librarians comprised sixty-three libraries, and that THE JOURNAL was already being sent free to nearly two-thirds of them. Since that time others have been added as their paid subscriptions expired, until at present nearly all the libraries belonging to the Association of Medical Librarians, excluding foreign libraries, are on the complimentary list. It has always been the policy of the Board of Trustees to supply THE JOURNAL complimentarily to deserving libraries; hence not only is it sent free to nearly all the libraries belonging to the Association of Medical Librarians but also to more than twice as many libraries as are found in the membership of that association. Many small libraries receiving THE JOURNAL complimentarily are not members of the Association of Medical Librarians and are not able to pay the annual dues of $10.00—some of them are small and struggling for existence; some are connected with medical colleges, hospitals or county societies, etc.

It is quite true that there are some libraries on the membership list of the Association of Medical Librarians that are not receiving THE JOURNAL free. For instance, it hardly seemed necessary that THE JOURNAL should be sent gratuitously to the United States Government (the Library of the Surgeon General's Office). This may be regarded by our critics as unjust discrimination on the part of the Association against that weak and struggling institution, the national government, but, inasmuch as the Library of the Surgeon General's Office subscribes for and pays for every medical journal published in the United States, such action can hardly be considered either heartless or mercenary. The New York State Library also belongs to the Association of Medical Librarians. It also pays for THE JOURNAL. This library certainly would not ask for nor has it any need of a complimentary copy. Furthermore, if THE JOURNAL were sent free to the library of the great and rich state of New York, why should it not be sent free to the libraries of all other states? There are four Canadian and two English libraries on the list of members of the Association of Medical Librarians:—it is difficult to see just why the American Medical Association should send free copies of its JOURNAL to Canadian and English libraries.

The Association of Medical Librarians is doing good work and it has a field of usefulness. Its request for free copies of THE JOURNAL for its members has been practically granted, with but few exceptions, but the arrangements have been individual and not collective—they have been made with the libraries direct.

We respectfully suggest to the editor of the journal quoted that hereafter he obtain his facts first and write his editorials afterward, thus reversing his usual procedure when criticising the American Medical Association and its work.

In conclusion, we do not wholly regret the opportunity that this attack has given us to call attention to one among the many good things the American Medical Association is doing—quietly and without the sounding of trumpets.

ILLINOIS AMENDS ITS PRACTICE ACT.

In the department of Medical Economics in this issue is the text of the amendment to the medical practice act of Illinois, adopted November 1. By this amendment the State Board of Health, which is the licensing body in Illinois, is authorized to establish a standard of preliminary education and to "require satisfactory proof of the enforcement of this standard by medical colleges." The question as to what constitutes satisfactory proof is to be determined by the board. It is specifically provided that examinations of applicants for admission to a medical college that have been conducted by the faculty or officers of said medical college shall not be recognized by the board, but that the diploma of an approved four-year high school or equivalent school or the certificate of the state superintendent of public instruction shall be satisfactory evidence. This amendment is most important, not only because it specifically authorizes the state board to establish and enforce a standard of preliminary education, but also because the right to say who is qualified to enter a medical college is taken away from such college and placed in the hands of impartial officers. This legislation places on the board a responsibility of mighty import to future medical education in Illinois, a responsibility which we have no doubt is fully appreciated by the board. We may therefore hope for better things regarding medical education in Chicago.

MORE LOOSE THINKING BY EDDYITES.

In the editorial columns of THE JOURNAL, November 23, appeared a notice of a book on Eddyism, from which was quoted the statement that "answers to criticisms on Christian Science satisfy none except those who read carelessly and think loosely." An excellent illustration of this mental characteristic of the disciples of Eddyism is furnished by a letter which appeared in the Chicago *Record-Herald,* November 30, in which an attempt is made to "explain" the death of a Mrs. Campbell of LaGrange, who died of diphtheria. The writer of the letter states "as a matter of justice" that it should be understood "that as soon as the symptoms of diphtheria were noticed the practitioner reported the case to the board of health." It would be interesting to know by what symptoms a "Christian Science practitioner" would diagnose diphtheria, or how the manifestations of this condition would be any different from those of other conditions produced by "mortal mind." It would also be interesting to know where and at whose hands this "practitioner" received instructions regarding the diagnostic symptoms of diphtheria. How did the "practitioner" know that she did not have to deal with a case of follicular tonsillitis? How would an Eddyite distinguish between an infectious and a noninfectious angina? Are we to understand that such knowledge forms a necessary part of the instruction of a "Christian Science practitioner"? If so, why should they not be required to furnish evidence of their knowledge before assuming responsibility for the lives of their patients, just as other practitioners are required to do? If a knowledge of the diagnostic symptoms of diphtheria is a necessary part of the qualifications of a "healer," why should not a similar knowledge of pneumonia, scarlet fever, smallpox, nephritis or any other disease also be required, and if this knowledge is necessary, must not the "healer" also be expected to understand anatomy, physiology and chemistry? In a word, why should not the "healer" be required to furnish evidence of an adequate knowledge of disease and diseased conditions before being allowed to treat patients, no matter what method of treatment may be followed? Does not the statement that the "healer" attempted to make a diagnosis of diphtheria and reported the case to the board of health as soon as such a diagnosis was established in her mind, give away the whole case of Eddyism so far as the logical thinker is concerned? Farther on in the same letter occurs the apologetic argument that "it sometimes occurs that physicians are not readily able to diagnose disease or that they are mistaken in their diagnosis." Quite true. It also happens sometimes that licensed pilots make mistakes, but would any sane person regard this as an excuse for sending into the wheel house of the ocean liner an untrained and inexperienced person to guide the vessel with its precious freight of human lives?

CHRONIC SUPRARENAL INSUFFICIENCY AS A CAUSE OF NEURASTHENIA.

The importance of withholding a diagnosis of true neurasthenia until all possible organic etiologic factors have been excluded is well recognized. Lesions of the heart, kidneys, pelvic organs, etc., are frequently found to be responsible for a condition that might on superficial consideration appear to be merely a functional nervous disorder. Arterial hypertension is frequently associated with neurasthenia, but the presence of a low tone of the arterial system in this disease has received very little attention. Suprarenal insufficiency as a factor in the etiology of certain neurasthenic symptoms was remarked by Sargent and Ribadeau-Dumas, and more recently Schneider[1] has observed two patients in whom a chronic suprarenal insufficiency was responsible for a marked and typical neurasthenic condition. Both patients had long suffered from symptoms of severe functional nervous disorders which had proved unresponsive to treatment. There was marked arterial hypotension, subnormal temperature, feeble pulse, and in one case a tendency to tachycardia, and both patients presented the *"ligne blanche abdominale"* of Sargent, which Schneider

1. Rev. de Méd., No. 10, 1907.

considers almost pathognomonic of suprarenal insufficiency. Many of the other symptoms, both mental and physical, corresponded to those which are known to follow an organic insufficiency of this nature, and both patients were much improved under appropriate treatment. Such a condition might easily be overlooked or misinterpreted. It is not unlikely that this organic failure may be found to explain a certain number of intractable cases of neurasthenia.

PRESIDENT ROOSEVELT ON THE ARMY MEDICAL CORPS.

The text of the annual message of President Roosevelt appears just as we go to press. Several paragraphs of it will be read with special interest by physicians, particularly by those interested in public health legislation. In commenting on the operation and results of the national Food and Drugs Act, passed at the last session of Congress, the President states that the law has been of benefit to both consumers and producers. His recommendations regarding a national bureau of public health will be considered later. Regarding the necessity of an increased army medical corps, President Roosevelt says:

> The medical corps should be much larger than the needs of our regular Army in war. Yet at present it is smaller than the needs of the service demand even in peace. The Spanish War occurred less than ten years ago. The chief loss we suffered in it was by disease among the regiments which never left the country. At the moment the nation seemed deeply impressed by this fact yet seemingly it has already been forgotten, for not the slightest effort has been made to prepare a medical corps of sufficient size to prevent the repetition of the same disaster on a much larger scale if we should ever be engaged in a serious conflict. The trouble in the Spanish War was not with the then existing officials of the War Department; it was with the representatives of the people as a whole, who, for the preceding thirty years, had declined to make the necessary provision for the Army. Unless ample provision is now made by Congress to put the Medical Corps where it should be put disaster in the next war is inevitable, and the responsibility will not lie with those then in charge of the War Department, but with those who now decline to make the necessary provision. A well-organized medical corps, thoroughly trained before the advent of war in all the important administrative duties of a military sanitary corps, is essential to the efficiency of any large army, and especially of a large volunteer army. Such knowledge of medicine and surgery as is possessed by the medical profession generally will not alone suffice to make an efficient military surgeon. He must have, in addition, knowledge of the administration and sanitation of large field hospitals and camps, in order to safeguard the health and lives of men entrusted in great numbers to his care. A bill has long been pending before the Congress for the reorganization of the Medical Corps; its passage is urgently needed.

This official statement is of interest as substantiating the claims made by leading members of the medical profession regarding the medical conduct of the Spanish-American War. President Roosevelt, as a member of the official family of President McKinley, and as a colonel of cavalry in the service, certainly was in a position to know the facts. His positive statements as to the urgent necessity of an increased medical staff for the army is entitled to at least as much weight and consideration as the dogmatic and narrow views of the speaker of the House, who, during the last session of Congress, arbitrarily prevented legislation on this subject by failing to call for the report of the committee having the bill in charge, which committee, as he well knew, had a favorable report ready for presentation. To Joseph D. Cannon, Speaker of the House of Representatives, must the blame attach, and to no one else. It is to be hoped that the present Congress will insist that some action be taken on this humane measure. If the speaker of the House is, as he has claimed to be, really in favor of the bill, he has an opportunity to redeem himself by encouraging and not obstructing it. The issue is again squarely before Congress, which must provide an improved army medical service, otherwise the legislators themselves will have to shoulder the responsibility and answer to the American people for any future loss of lives which may occur in the army through an undermanned and untrained medical staff.

Medical News

GEORGIA.

Management Exonerated.—At the November meeting of the medical board of Grady Hospital, Atlanta, the findings of the special committee, which has had under investigation the charges of harsh treatment and overwork preferred by Miss Dantzler were reported, and the management was unanimously exonerated.

District Society Meetings.—At the annual meeting of the Sixth District Medical Association, held in Macon, November 13, the following officers were elected: Dr. Robert B. Barron, Macon, president; Dr. George Alexander, Flovilla, vice-president; Dr. Eugene B. Elder, Macon, secretary and treasurer (re-elected). The next meeting of the association is to be held in Monroe County.——The Tenth District Medical Association met for organization at Augusta, November 5, and adopted a constitution and by-laws. The meeting was called to order by Dr. Wyman W. Pilcher, Warrenton, councilor of the district. The following officers were elected: President, Dr. Thomas D. Coleman, Augusta; vice-president, Dr. James W. Pilcher, Stellaville, and secretary and treasurer, Dr. George A. Traylor, Augusta. The next meeting is to be held in Augusta.

ILLINOIS.

A Hospital for Springfield.—By the will of the late Col. Stephen L. Littler, the bulk of his estate is eventually to become available for the foundation and maintenance of a new hospital. The estate is valued at nearly $1,000,000.

Under Care of Healers.—After suffering from diphtheria for a week, being treated by Eddyists, a woman of La Grange died November 28. The disease was not recognized as diphtheria until a few hours before death, when a physician was called.

Personal.—Dr. August H. Arp, Moline, was thrown from his buggy November 25, fracturing his right thigh.——Dr. Nelson K. McCormick, physician at the Soldiers' Orphan Home, Normal, has resigned.——Dr. Rosalie M. Ladova, Chicago, has recovered from injuries received at Winona Lake, Ind., in July last, and has resumed practice.

Communicable Diseases.—Scarlet fever is reported to be spreading rapidly in Waukegan.——Chillicothe is reported to have an epidemic of scarlet fever, from which several deaths have resulted.——An epidemic of diphtheria has caused the closure of three country schools northwest of Mattoon.——Pneumonia is reported to be very prevalent in the region of Kane.

Chicago.

Hospital Notes.—The Cribside Society will build a hospital at 481 Orchard Street, to cost $30,000.——A benefit performance for the Chicago Emergency Hospital was given at the Illinois Theater, December 5.

Internes' Association.—The annual meeting and banquet of the Alumni Association of Cook County Hospital Internes, held November 26, Dr. Samuel C. Plummer was elected president, and Dr. Frederick A. Besley, secretary and treasurer.

Midwife Sent to Penitentiary.—Mrs. Lucy Hagenow, nearly 60 years of age, is said to have been found guilty November 30, of an illegal operation, causing the death of Mrs. Anna Horavitch, and sentenced to imprisonment for 20 years in the state

penitentiary. Her conviction is due to the activity of the committee on criminal abortion of the Chicago Medical Society.

Neisser in Chicago.—Prof. Dr. Max Neisser, assistant to Professor Ehrlich, who is making a hurried visit to America, has been spending a few days in Chicago, studying the methods of prevention of tuberculosis, milk hygiene and instituting special immunity research in the interest of the City Hygienic Institute of Frankfort-on-the-Main, of which he was recently appointed chief.

Communicable Diseases.—During November 562 cases of diphtheria were reported, or 41 fewer than for the corresponding month of 1906; 341 cases of scarlet fever, or 178 fewer than for November of last year; 71 cases of typhoid fever, or 60 more than were reported in November, 1906, and 127 cases of tuberculosis, or 121 more than were reported in the corresponding month of last year.

Deaths of the Week.—During the week ended November 30, 502 deaths were reported, 33 fewer than for the preceding week and 69 fewer than for the corresponding week of 1906, the annual death rate per 1,000 being 12.42. Of the deaths reported 78 were from pneumonia; 52 from consumption; 46 from heart diseases; 36 from nephritis; 26 from cancer; 16 from diphtheria; 7 each from scarlet fever and typhoid fever; 3 from influenza, and one from measles.

November Mortality.—During November 2,160 deaths were reported, 109 fewer than for the preceding month, and 226 fewer than for the corresponding month of 1906, the respective annual mortalities per 1,000 being 12.47, 12.67 and 14.17. Pneumonia caused 322 deaths; consumption, 238; heart diseases, 201; violence (including suicide), 161; nephritis, 155; acute intestinal diseases, 119; cancer, 102; diphtheria, 47; scarlet fever, 46; influenza, 10, and measles and whooping cough, each 6.

INDIANA.

Society Meetings.—At the third annual meeting of the Fourth Councilor District Medical Association, which was held at Columbus, October 31, the following officers were elected: Dr. Edward D. Freeman, Osgood, president; Dr. Scott Culbertson, Vevay, vice-president; Dr. George E. Denny, Madison, secretary, and Dr. James H. Green, North Vernon, treasurer. The next meeting will be held in November, 1908, at Madison. ——At the annual meeting of the Eighth Councilor District Medical Society, held in Muncie, October 22, the chief work was on the mutual relations of the State Board of Medical Registration and Examination and the county medical societies, and the best method of making the work of the county medical societies interesting and profitable. The society adopted resolutions endorsing the state registration law, urging physicians to make reports to the proper authorities of deaths, births and communicable diseases.

MARYLAND.

Jewish Home for Consumptives.—Ground was broken for the Jewish Home for Consumptives, November 27. Mr. Jacob Epstein gave $35,000 for the erection of the building, and 23 benevolent Hebrews have subscribed $500 each for three years for its maintenance. The site occupies 32 acres, is 730 feet above sea level, and the institution will accommodate 50 patients.

Medical Society Meeting.—At the annual meeting of the Carroll County Medical Society, held in Westminster, November 25, Dr. George H. Brown, New Windsor, was elected president; Dr. Clotworthy Birnie, Taneytown, vice-president; Dr. Charles R. Foutz, Westminster, secretary and treasurer; Drs. Lewis K. Woodward, Westminster, and Edwin D. Cronk, Winfield, censors, and Dr. Milton D. Norris, Sykesville, delegate to the Medico-Chirurgical Faculty of Maryland.

McCormack in Baltimore County.—Dr. J. N. McCormack, Bowling Green, Ky., visited Towson as the guest of the Baltimore County Medical Society, November 26, and spoke at the Guild House in the afternoon on "How to Make County Societies Thoroughly Useful in the Everyday Life of Physicians and People." In tne evening he addressed a public meeting. He has already addressed the county medical society meetings at Easton, Elkton, Cambridge, Salisbury, Denton and Westminster.

Baltimore.

Personal.—Drs. K. H. Beall and F. C. Beall, members of the house staff of Johns Hopkins Hospital, Baltimore, have located in Fort Worth, Texas.——Dr. R. Tunstall Taylor, Baltimore, has recovered from his recent operation for appendicitis.

Fined for Violation of Health Laws.—A lawyer of Baltimore was recently convicted of violating the health laws by renting a house in which a tuberculosis patient had lived without having it fumigated to the satisfaction of the health department. The penalty for this offense is a fine of $250.

Classes of Epileptics.—Two classes for epileptic children have been started in the public schools of Baltimore and to these classes 64 children have thus far been admitted. As many of the pupils live far away from the schools where the classes are held, they are furnished car fare at public expense.

Medical Staff Election.—The Medical Society of the City Hospital Staff at its initial meeting, held November 19, elected the following officers: President, Dr. Walter D. Wise; vice-president, Dr. Joseph W. Walsh; secretary and treasurer, Dr. Frederick W. Steiner, and executive committee, Drs. Harry W. Esker, J. K. Pepper and A. Winlette.

Hospital Notes.—Dr. William A. Dabney, superintendent of the Union Protestant Infirmary, reports that 1,018 patients were treated during the fiscal year; of this number, 30 per cent. were medical, 50 per cent. surgical, and 20 per cent. gynecologic cases.——The plans of the Jewish Hospital for Consumptives, for which ground was broken November 19, call for a three-story building 153x57 feet, constructed of stone and rough stucco. Dr. Louis P. Hamburger is president of the institution.——A committee consisting of Drs. William F. Lockwood, William H. Howell, Arthur M. Shipley and W. B. D. Penniman, representing medical colleges and hospitals, and Mr. Douglas H. Thomas, Jr., an architect, representing the State Board of Health, has been appointed to investigate and make a report on the conditions at Bayview Hospital, which is also the city almshouse.

MASSACHUSETTS.

Medicine Sample Distributors Arrested.—Four men who have been distributing samples of cough medicine in East Boston have been arrested and will be prosecuted. This is the first arrest under the law passed by the last legislature forbidding distribution of drugs in this way.

Hospital for Peabody.—Peabody will soon occupy a fine new hospital, constructed of brick with white trimmings, three stories in height and costing about $50,000. The administration building is separate from the wards, which occupy one pavilion, and from the operating room, laboratories, etc., which are contained in another.

Hospital for Crippled Children Opened.—Four buildings of the new Massachusetts Hospital for Crippled and Deformed Children, Canton, were opened December 2. Accommodations will be provided for 300 children, and the institution will be in charge of Dr. John E. Fish, Boston. The state has appropriated $300,000 for this hospital, of which about one-half has already been expended.

Elections.—At the annual meeting of the Boston Association for the Relief and Control of Tuberculosis, November 19, Dr. Edward O. Otis was re-elected president, and Dr. Arthur K. Stone, vice-president.——At a meeting of the Attleboro Doctors' Club, November 20, Dr. Laura V. G. Mackie was elected president; Dr. Mary H. Battershall, vice-president, and Dr. George E. McPherson, secretary and treasurer.

Medical Department Changes.—The adjutant general has announced the reorganization of the state militia, to comply with the provisions of the Dick bill. In the medical department the following officers have been commissioned: Surgeon general, Brigadier-General William H. Devine, Boston; majors, Walter A. Smith, Springfield; Howard S. Dearing, Boston; Ernest A. Gates, Springfield; J. William Voss, Beverly; Thomas L. Jenkins, Topsfield; Joseph S. Hart, Lincoln; David Cheever, Boston; James E. McGourty, Worcester, and Robert E. Bell, Lowell; captains, Abram C. Williams, Springfield; Charles S. Butler, Boston; Charles H. Keene, Boston; Patrick F. Butler, Boston; George Osgood, Boston; Eustace L. Fiske, Boston; Harry H. Hartung, Boston, and Malcolm Seymour, Boston; first lieutenants, Drs. Frederick L. Bogan, Somerville; Perley P. Comey, Worcester; William R. P. Emerson, Boston; Frederick E. Jones, Quincy; Edwin P. Seaver, Jr., Waban; Edwin D. Towle, Salem, and Dunlap P. Penhallow, all transferred from various organizations of the state.

KENTUCKY.

Meeting for District Nurses.—The King's Daughters collected $4,270 November 11 for support of the district-nurse work in Louisville.

Building of Annex Enjoined.—The building of the new tuberculosis annex to the City Hospital, Louisville, was stopped by injunction, it being claimed by the complainant that the hospital would be a menace to his health and a nuisance.

Would Retain Hospital Committee.—The second report of the committee appointed by the mayor of Louisville to investigate the City Hospital shows a marked improvement in the condition of the hospital since Dr. Jouett Menefee has been appointed superintendent. On account of the good work done by this committee, its retention as a board of safety is urged.

NEW JERSEY.

Eddyists Fined.—Judge Horner has refused a new trial to Eddyist Edwin M. Watson and wife of Moorestown, who were recently convicted of manslaughter on the charge of not having provided proper medical attendance for their child, and has sentenced them to pay a fine of $100.

Officers Elected.—At the annual meeting of the Ocean County Medical Society, November 19, the following officers were elected: President, Dr. Vanderhoef M. Disbrow, Lakewood; vice-president, Dr. Eugene E. S. Corrigan, Point Pleasant; secretary, Dr. Alexander M. Heron, Lakewood; treasurer, Dr. Irwin H. Hance, Lakewood; reporter, Dr. William C. Schaffler, Lakewood, and delegate, Dr. Ralph R. Jones, Toms River.

NEW YORK.

Communicable Diseases.—Measles is reported to be epidemic in Buffalo and Middlesex.——There are said to be 19 cases of typhoid fever in Hastings-on-the-Hudson.——Smallpox is reported be be spreading in Jefferson, Lewis and Oneida counties.

Health Officers Unite.—At a meeting of 34 health officers of Onondaga County, held in Syracuse, an association was formed, known as the Association of Health Officers of Onondaga County. Regular meetings are to be held four times a year and the annual meeting on the second Tuesday in April.

Veeder Pavilion Opened.—The Veeder Memorial Pavilion, an addition to Faxton Hospital, Utica, was opened November 23. The new building is four stories high, contains an operating room, sterilizing room, dispensary and diet kitchen, eleven private rooms for patients and a room for special nurses.

Personal.—Dr. Frederick F. Hoyer, North Tonawanda, who has been critically ill, is reported to be improving.——Dr. Sarah R. A. Dolley has been made a life member of the Rochester Academy of Medicine.——Dr. Edward D. Woodhull, Monroe, recently underwent a serious operation in Roosevelt Hospital, New York City.

Pupils' Eyes Examined.—In accordance with the request of the State Department of Health the examination of the eyes and hearing of the children in the public schools is going on. The tests are very simple ones, including only the ability to read coarse and fine print at prescribed distances, and to hear whispered words at a given distance.

Pioneer Physician Honored.—On the occasion of the eighty-fifth birthday of Dr. Thomas D. Strong, the oldest practitioner of Chautauqua County, a number of physicians of the county assembled at Dr. Strong's house in Westfield, November 22, and presented him with an anniversary clock. After the presentation, Dr. and Mrs. Strong joined the party, and all returned to Mayville, where dinner was served at the Peacock Inn.

Inquiry on Ward's Island.—A request has been made by Dr. William Mabon, superintendent of the Manhattan State Hospital, Ward's Island, that the district attorney's office investigate the charges of cruelty made against the helpers in the hospital. This investigation would be independent of that made by the state commission in lunacy, which has already been begun. None of the 470 helpers will get a leave of absence until both investigations have been completed.

Prohibition of Cocain Sale.—The attention of local pharmacists of Buffalo has been directed to the amendment to the penal code, which went into effect September 1, relating to the sale of cocain, eucain or their salts, and which can not now be sold by wholesale without the registration of the quantity, kind of drug, name of purchaser, etc., and can be retailed only on physicians' prescriptions, which can not be refilled. The original package must bear a label in red ink, containing name of drug. Imprisonment for a year, or a fine of $1,000, or both, are the maximum penalties for violation of this law.

New York City.

A Ward Quarantined.—By order of the health department one of the wards in St. Vincent's Hospital was quarantined because of a case of scarlet fever.

Personal.—Dr. Howard Lilienthal was recently robbed of $4,000 worth of jewelry and valuable securities.——Dr. Charles J. Pflug has been appointed as physician to the department of finance at a salary of $2,500.

Anniversary Address.—At the New York Academy of Medicine, Col. William C. Gorgas, U. S. Army, chief sanitary officer of the Isthmian Canal Commission, gave an address and was tendered a reception November 29.

Psychiatric Clinic.—Dr. Oliver M. Dewing, superintendent of the Long Island State Hospital, announces a psychiatric clinic to be held at the hospital, corner of Clarkson Street and Albany Avenue, Brooklyn, at 9 a. m. every Friday, to which physicians are invited.

A New Hospital.—The Hospital for Deformities and Joint Diseases on Madison Avenue was opened November 9. Dr. Henry W. Frauenthal is the physician and surgeon-in-chief. It is intended that each day six doctors, three physical culture teachers, three nurses and two masseurs shall spend two hours a day each in the work.

Orthopedic Clinic.—The trustees of the New York Orthopedic Dispensary and Hospital announce that Surgeon-in-Chief Dr. Russell A. Hibbs will give a course of clinical lectures on orthopedic surgery at the institution, to which the medical profession and students are invited, on Tuesday and Friday afternoons at 4:30, from December 3 to January 3.

Death in Gas Stoves.—Health Commissioner Wende appeared before the board of aldermen to advocate a law against the selling of gas stoves not designed to connect with a chimney. He reported 18 deaths by such stoves, three of which occurred in the same family. He also protested against the house-to-house distribution of samples of medicines without a permit from the mayor.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended November 23, 345 cases of tuberculosis, with 154 deaths; 293 cases of measles, with 5 deaths; 282 cases of diphtheria, with 31 deaths; 278 cases of scarlet fever, with 17 deaths; 86 cases of typhoid, with 12 deaths; 27 cases of whooping cough, with one death; 4 cases of cerebrospinal meningitis, with 5 deaths; and 136 cases of varicella, a total of 1,451 cases and 225 deaths.

Barbers Use Wood Alcohol.—The Health Department has received numerous complaints during the past year because barbers were using toilet preparations which were injurious. The Health Department collected samples and an analysis of 44 samples showed the presence of wood alcohol where grain alcohol should have been used. The barbers disclaimed responsibility for the presence of the wood alcohol and alleged that they had paid for grain alcohol. It was found oftener in bay rum than elsewhere.

The Jewish Hospital of Brooklyn.—At the annual meeting of the trustees of the Jewish Hospital of Brooklyn, President Abraham Abraham read a report of the work since the opening of the hospital, Dec. 17, 1906. The total number applying for admission during that time was 1,544. The capacity is 160 beds, and the cost of maintenance between $90,000 and $100,000. Land has been purchased adjoining the hospital for the purpose of erecting a training school for nurses as soon as the financial condition of the hospital will permit the work to be undertaken.

Increase in the Death Rate.—The report of the Health Department for the third quarter of the year showed that the deaths up to October 1 were 20,139, an increase of 709 over the same period of 1906. The death rate last year was 18.57 and this year 18.66 per 1,000. The report showed the following decreases: Typhoid fever, 52; malarial fever, 4; smallpox, 7; whooping cough, 10; diphtheria and croup, 30; pulmonary tuberculosis, 6; meningitis, 93; apoplexy, 86; acute bronchitis, 109; lobar pneumonia, 114; Bright's disease and acute nephritis, 175; old age, 59; sunstroke, 53, and suicide, 21. The increases in deaths were as follows: Measles, 106; scarlet fever, 46; influenza, 6; cancer, 34; organic heart disease, 362; bronchopneumonia, 327; diarrheas under 5 years of age, 468; accidents other than sunstroke, 47, and homicide, 26. The number of deaths from diarrhea under 5 years of age was 4,456, or more than one-fifth of the total number of deaths. This was not directly attributable to the water or milk supply, but to the fact that families do not use proper care in providing food for young children. The deaths from violence numbered 1,365.

PENNSYLVANIA.

Donation Day.—The annual donation day of the Chester Hospital was held at that institution November 28, and besides large quantities of provisions, donations of money were made to the extent of $1,400.

Personal.—Dr. William K. Evans, president of the Chester board of health, is recovering from typhoid fever.——Dr. Ethan

A. Campbell, who has been connected with the American Mission Hospital in Cairo, Egypt, has returned home and will locate in Chester.

Fire Threatens Hospital.—The Pottstown Hospital was saved from a disastrous fire November 12 by the prompt action of the staff, assisted by the attendants ot the institution. The fire started in the dispensary from the boiling over of a mixture of wax and turpentine on a gas heater.

Tuberculosis Dispensary in Pittsburg.—Dr. Samuel G. Dixon, commissioner of health, has selected a site on Grant Street, Pittsburg, for a new state tuberculosis dispensary. It is stated that within three weeks this institution will be opened and tuberculosis sufferers of western Pennsylvania will be able to secure free treatment.

Society Election.—At the October meeting of the Lawrence County Medical Society the following officers were elected: President, Dr. Henry R. Wilson; vice-presidents, Drs. Charles A. Reed and William A. Womer; secretary, Dr. Walter L. Campbell, and treasurer, Dr. John C. Foster, all of New Castle. The censors for 1906 were re-elected.

Philadelphia.

Hospital Opening.—The opening exercises of the new hospital building of the American Hospital for Diseases of the Stomach were held November 20. The speakers were Hon. William Potter, president of the board of trustees of Jefferson Medical College; Hon. John L. Kinsey, and Drs. James Tyson and Lewis Brinton.

Bequests for Charities.—In the will of Adeline G. Fry of Germantown the following institutions and organizations were named as beneficiaries: Germantown Dispensary and Hospital, $3,000; Aid Association of the Philadelphia County Medical Society, $1,000; Home for Consumptives, Chestnut Hill, $2,000, and Philadelphia Lying-in Charity Hospital, $8,000.—— By the will of the late Hanson L. Withers the hospital of the University of Pennsylvania will receive $5,000 to endow a free bed for patients suffering from pulmonary affections.

Another Hospital Planned.—The Northwestern General Hospital, which was recently granted a charter, and which has opened temporary quarters, will erect a hospital building in the northwestern portion of the city. The preliminary plans have been prepared and call for a four-story structure of brick with limestone trimmings, to measure 45 by 125 feet. The cost of the hospital will be $75,000.

Personal.—Dr. Lemuel J. Deal, who was arrested, charged with performing a criminal operation, was released from custody November 28, it being discovered that the patient died from natural causes.——Dr. W. Wharton Hollingsworth is still critically ill in St. Luke's Hospital.——Dr. Frank Woodbury was elected secretary of the lunacy committee of the State Board of Charities November 27, vice Dr. J. Nicholas Mitchell, resigned.

Hospital Reports.—The report of the German Hospital for last year shows that in all 3,595 patients were treated in the institution, 11,230 new patients were treated in the dispensaries, and 48,651 visits were made to the out-patient department.——The report of the Jefferson Maternity Hospital for the year shows 177 women and 149 children were cared for by that institution. In the clinic 212 patients were treated.—— The report of the Kensington Hospital for Women for the past year shows that that institution cared for 1,047 patients; 455 patients were admitted to the wards and 592 were treated in the out-patient department.

Farm Life for Consumptives.—Arrangements are being made by the Department of Health and Charities to send a score more of tuberculosis patients from the Philadelphia General Hospital to the city tract at Byberry farm. The change is to be in the nature of an experiment, and if it proves beneficial a greater number of consumptive patients will be removed to Byberry. One of the large farm houses on the tract will be used after changes have been made to adapt it to the treatment required for consumptives. The porches are being widened and extended all around the building for the open-air treatment. The removal of these patients to Byberry will greatly relieve the congested conditions in Blockley.

Health Report.—The total number of deaths reported for the week ended November 30 was 441, which compares favorably with 453 reported in the preceding week and 446 reported in the corresponding period of 1906. The principal causes of death were: Typhoid fever, 5; diphtheria, 9; consumption, 53; cancer, 19; diabetes, 7; apoplexy, 10; paralysis, 10; heart disease, 43; acute respiratory diseases, 55; enteritis, 18; Bright's disease, 39; premature birth, 14; congenital debility, 12; suicide, 4; accidents, 14, and marasmus, 9. There were 218 cases of contagious disease reported, with 16 deaths, as compared with 182 cases and 22 deaths reported in the preceding week.

GENERAL.

National Legislative Conference.—The annual conference of the Committee on Medical Legislation of the American Medical Association and of the National Legislative Council, of one representative from each state, will be held at the Auditorium Hotel, Chicago, December 10-12. Members of state society committees on medical legislation and public policy have also been invited to be present and to take part in the meetings. This is the first conference on medical legislation that has been held in Chicago. A large attendance is hoped for, as a number of important matters will be discussed.

Endowment for Rockefeller Research Institute.—The Rockefeller Institute for Medical Research has just been the recipient from Mr. Rockefeller of an endowment of $2,600,000. The income of this is placed at the disposal of the directors, without any restrictions whatever as to how it shall be applied, except that it must be used for the purposes of the institute. This makes available an annual income of about $120,000 to be applied to scientific purposes. This is the first endowment received by the Rockefeller Institute. All previous benefactions—the first of $200,000 and the second of $1,000,000—were for the support of the work. The institute is now placed on a permanent basis, and the endowment may be interpreted as indicating that it is fulfilling the purposes of its founder.

The American Journal of Orthopedic Surgery.—This journal announces that hereafter it will have a distinct feature in the form of complete monographs in each of its quarterly issues. Some of those that are announced are as follows: "Mechanics of Lateral Curvature," by Henry O. Feiss; "Treatment of Lateral Curvature," by E. H. Bradford; "Present Status of the Bloodless Operation for Congenital Dislocation of the Hip," by John Ridlon; "Acquired Spinal Deformities," by Joel E. Goldthwait; "Obscure Hip Conditions," by E. H. Sayre, and "Flatfoot," by F. E. Peckham. So far as we know, this is the only journal in the English language devoted entirely to orthopedic surgery. It is the official organ of the American Orthopedic Association, and is certainly a credit to that body. Its advertising pages are limited exclusively to books and to instruments of interest to orthopedic surgeons.

FOREIGN.

Yellow Fever on Barbados.—The cable states that seven cases of yellow fever were reported at Bridgetown between November 18 and 21. One of the patients is the wife of Dr. Alleyne, the resident surgeon general of the hospital. Barbados is the most easterly island of the lesser Antilles.

French Hospitals Get Proceeds from Gambling.—The French *Assistance Publique* is said to have received this year nearly a million and a quarter as the percentage allowed this branch of the public service on the money put up on races. The betting at the Pari-Mutuel last year exceeded all previous records, over $60,000,000 having been placed on bets, of which the hospitals received the above percentage.

Mexican Congress Postponed on Account of Dengue.—The International Medical Association of Mexico was to have met at Monterey in November for its third annual congress, but it was postponed until January 23-25, on account of the prevalence of dengue fever at Monterey. This association combines English-speaking and Spanish-speaking physicians on an equal footing, the programs and summaries being printed in both languages, the speakers using their mother tongue. Dr. J. S. Steele of Monterey, N. L., is the secretary of the congress, and he states that unusual interest has been manifested in the meeting this year.

Ewald Retires from Editorship.—The editors of the *Berliner medizinische Wochenschrift* since the early eighties have been C. A. Ewald and C. Posner, but the former now retires. His place is to be taken by Hans Kohn, a skilled medical journalist, long connected with the Munich medical weekly. Ewald retires to devote more time to his special research and training of others in the pathology of the digestive organs. The *Berliner klinische Wochenschrift* is now in its forty-fifth year. Posner has long been president of the German Association of the Medical Press and an officer in the international organization.

Queen of Portugal Not a Physician.—The *British Medical Journal*, November 23, reprints a paragraph from its issue of Feb. 1, 1906, wherein it states that it is authoritatively informed that Queen Amelie of Portugal "has never even thought of studying medicine, still less of passing examinations, and her whole interest in the subject is one of philanthropy." In-

asmuch as the *British Medical Journal* avers that "the source from which the information was obtained excludes all possibility of error," we suppose we must accept it with as much equanimity as possible, more particularly as the *Journal* admits that it was "to some extent responsible for setting the legend in circulation." It probably originated in the honorary degree of medicine conferred by the medical faculty on the queen.

Honors for British Medical Men.—The following physicians were among the recipients of "birthday honors" on the occasion of King Edward's birthday, November 9: Prof. Thomas Clifford Allbutt was made K.C.B.; Lieut.-Col. and Hon. Col. George Thomas Beatson, R.A.M.C. (Volunteers), surgeon to the Western Infirmary and to the Cancer Hospital, Glasgow, who was C.B., was promoted to K.C.B.; Col. Francis Lawrance Stephenson, who has done valuable work in connection with the Royal Army Medical Corps (Volunteer), was made C.B.; Dr. W. H. Allchin was knighted, as also Dr. William John Thompson, a representative member of the profession in Ireland; Dr. Robert Millar Coulter, deputy postmaster of the Dominion of Canada, and Dr. Arnold Theiler, government veterinary bacteriologist in the Transvaal, have been made companions of the Order of St. Michael.

Campaign Against Tuberculosis in Sweden.—A special number (in French) of the quarterly bulletin of the Swedish National Antituberculosis League, just received, reviews the work accomplished by the league since its foundation in 1904. There are now 22,000 members, each subscribing a certain amount annually, and the league has also received gifts amounting to nearly $28,000. An additional income was provided by the sale of the "antituberculosis postage stamps," four different types of which were offered for sale, 10 per cent. of the face value being turned over by the postal authorities to the league, representing to date nearly $60,000. The league has recently put on sale six different types of colored picture postal cards and stamped envelopes. More than 800 popular lectures on tuberculosis have been given in different parts of the country, with a permanent tuberculosis exhibition at Stockholm; pamphlets are also published and distributed free of charge, and the quarterly bulletin is mailed to members of the league and others. A committee was appointed to urge the authorities to construct more sanatoriums, and other committees to discuss ways and means. Healthy children from indigent families with tuberculous members have been boarded out in the country, although this latter measure has met with considerable opposition from parents and the clergy. The league also pays the expenses of six young physicians taking courses of instruction in some of the larger sanatoriums of the country. The league also rents a tenement house at Stockholm and sub-rents the rooms at reduced rates to families in which the wage-earner is partially disabled by tuberculosis, while the hygiene of the environment is carefully supervised and extra fuel is given to compensate for the heat lost by extra ventilation. The children are supplied with a warm breakfast. A trained nurse resides in the building and every effort is being made to prevent infection of the healthy children in the infected families. The results to date have been promising. An effort has been made to extend this same supervision to the rural districts. In the province of Norrbotten, with a population of 2,293, mostly farmers and fisherfolk, a physician and two trained nurses have been installed in the center of the district in a special building containing arrangements for free baths, fresh-air treatment and a section for the reception of healthy children. This building goes by the name of "Health" (*Hälsan*), and it admits the tuberculous who can not obtain a hygienic environment at home; others come for their meals and others to take the fresh-air treatment. Every one in the province has been examined, and when a case of phthisis is found the physician and nurse take the home under supervision. Money is supplied by the league to render the home more hygienic, and bedding, disinfectants, etc., are supplied free. If isolation can not be obtained for the sick they are transferred to Hälsan or a home is found for them elsewhere. Children who do not receive sufficiently nourishing food at home are given their meals. A mining company in the province donates $3,000 every year toward the work that is carried on by the league.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Nov. 16, 1907.

The Frequenting of Saloons by Women and Children.

The series of articles contributed to the London *Tribune* by Mr. G. R. Sims, the well-known writer, on the frequenting of public houses (saloons) by women and children, and the meeting, called by that paper, of philanthropists, church dignitaries, doctors and others, to discuss this grave scandal, has soon borne fruit. The home office has directed inquiries to be made and has now issued a report of information received from the police as to the practice. The evidence of the chief constables of London, Birmingham, Bristol, Leeds, Liverpool, Manchester and Sheffield bears out absolutely Mr. Sims' statements in his series of articles, "The Cry of the Children." There is an immense invasion into the public houses by women, a large proportion of whom are accompanied by young children. The women are often observed to give infants beer to drink. In London twenty-one houses were watched for four days (about thirteen hours a day), and two were watched for two days. Nearly 4,000 women entered, with more than one child to every four. Of the children 1,164 were infants in arms. It is highly probable that legislation prohibiting the practice will follow.

Infantile Dispensaries in Relation to Summer Diarrhea.

In the annual report by the medical officer of health, Croydon, there is a table showing that 57.5 per cent. of the cases of infantile diarrhea last seven days or less. Owing to the unsuccessful treatment of the disease, except in the very early stages, preventive measures are absolutely essential. It is suggested that these measures should include: 1. Continued and even greater attention to municipal cleanliness, including the supervision of the milk trade. 2. The notification yearly of diarrhea from June 1 to October 1. 3. Continued education of the mothers and prospective mothers concerning the care of infants and domestic hygiene.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Nov. 11, 1907.

An Unusual Case of Potassium Chlorate Poisoning.

Rapidly toxic action of chlorate of potassium was recently noted in a fatal case of poisoning which took place in this city. A woman who had for months used a solution of the drug as a gargle, inadvertently drank a glassful of it. A few minutes later she had pains all over the body, with cramps and dyspnea. Her face turned a peculiar purplish-gray hue and she soon lost consciousness. When brought to the hospital she rallied a little, but died shortly after—about an hour after drinking the solution. Postmortem examination showed engorgement of the kidneys and extensive hemolysis. The indiscriminate use of this drug has for some time been deprecated by medical men, especially by Professor von Schrötter, at whose clinic several such cases have appeared. Many persons exhibit a marked idiosyncrasy against this drug, so that very small doses cause toxic symptoms. This seems to have been the case in the fatality just recorded as the total amount of the drug taken was only about 6 grains.

The Introduction of Vaccination into Vienna.

Writing to the *Wiener klinische Wochenschrift*, Professor Neuberger gives a review of the conditions prevailing before the introduction of vaccination in Europe, and especially in Vienna. At the end of the eighteenth century the mortality from smallpox in Germany was 70,000 yearly, or 400,000 for Europe. In Vienna 2,000 people died annually from this disease. Jenner's method became known here in 1800 and a royal commission was appointed to study the question. Twenty-six children from the orphanage were vaccinated Sept. 1, 1800, and revaccination was performed ten weeks later without success. These facts so impressed the commission that the government was advised to recommend inoculation to all persons. The clergy took an active part in the recommendation and in 1802 there were 4,446 persons vaccinated. The number of vaccinations increased very rapidly in the first few years and the number of deaths from smallpox decreased to a remarkable degree.

New Operation for Detached Retina.

A new method of operating in those cases of blindness caused by effusion of liquid between the sclerotic and retina has been devised by Dr. Sachs. Instead of puncturing just behind the cornea, as has previously been done, Sachs makes the puncture behind the equator. By producing adhesions in the equatorial zone the retina obtains a firm hold. Recent cases offer the best prognosis and the puncture must be repeated at another point behind the equator if reaccumulation of liquid threatens to break the newly formed adhesions. The functional result is excellent if the operation is done early.

Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable. Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters; that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses.]

Rheumatic Carditis in Children.

Dr. Joseph M. Patton of Chicago (*Archives of Pediatrics*, September, 1907), in discussing this subject, uses the term "carditis" because he believes that rheumatism affecting the hearts of children involves more than a single tissue of that organ. He believes the majority of heart lesions in children are due to infection, and rheumatism as a cause heads the list. Simple endocarditis is rarely fatal during its acute stage, and is often unrecognized during this stage. Pericardial inflammation is more severe and more serious during its acute phase. Myocardial changes he believes are more frequent than has been thought, and in many cases the early appearance of dilatation can only be explained by assuming a damaged heart muscle, and the muscle is more likely to be damaged in severe cases of pericarditis than in endocarditis.

Patton thinks that in view of the extreme importance of preventive measures the symptoms of cardiac trouble should not be carelessly overlooked. "Rheumatic tendencies may manifest themselves insidiously, such as imperfect nutrition, transitory fever, growing pains, epigastric pain, nervousness, night terrors, chorea, myalgia, arthritis, tonsillitis, epistaxis, slight lobular pneumonia, pleurisy, small glandular nodules, erythema multiforme and irregular bowels may all be forerunners of actual rheumatic heart disease."

As so many cases of valvular disease come to the physician after 20 years of age without a definite previous history of the acute heart attack, he cautions against believing a heart to be uninvolved in childhood because no friction or bruit is heard, although there may be dyspnea and rapid heart action, and dyspnea in childhood is an important symptom of cardiac disability. Patton believes that the early recognition of this insidious rheumatic inflammation of the heart will often modify its course and may prevent the development of permanent organic changes.

Of course, the first aim should be to prevent such surroundings or conditions as develop rheumatism, which is the forerunner of most cardiac inflammations in children. Patton well emphasizes the necessity for attention to the upper respiratory tract such as hypertrophied mucous membranes on the turbinates, adenoid tissue in the nasopharynx, and enlarged tonsils in the throat. These should all be treated and removed if possible, as we now believe that acute inflammatory rheumatism is produced by a germ, and that this germ often enters by way of the tonsils, and, of course, mouth breathers are more likely to get infection of all kinds than are those who do not have obstructions in the nose or nasopharynx. Insanitary, damp dwellings and illy ventilated school houses predispose to rheumatism as well as to other infections.

If acute rheumatic carditis has developed or is suspected, the treatment is primarily rest, and prolonged rest, and rarely is this enforced for a sufficient length of time. Patton believes that "the recumbent position should be continued until the heart does not increase more than four or five beats per minute on the assumption of the erect posture, and this whether the time necessary be three weeks or six. Also, when the child begins to get about on its feet a rest of one-half to one hour after meals should be insisted on." During the prolonged necessary rest in bed passive movements may be done and gentle massage. This rest does not preclude a change of scene for the child from room to room or when available out on an open veranda, provided the child is kept flat. The fresh-air treatment is as important for these children as in lung affections.

For the medicinal treatment Patton uses the salicylates as follows:

℞.	gm. or c.c.	
Sodii salicylatis	6 to 10	
Sodii bicarbonatis	6 to 10	or ää 3iss-3iiss
Aquæ gaultheriæ	200	fl℥vii

M. et sig.: Two teaspoonfuls, with plenty of water, every four hours. For children from 5 to 10 years of age.

After active symptoms have ceased, the frequency and size of the above dose should be decreased. He also recommends the use of sodium salicylate solutions as gargles in sore throats that may be rheumatic.

After the convalescence is established he believes that small doses of iodids are beneficial as:

℞.	gm.	
Sodii iodidi	20	3v
Aquæ q. s. ad saturandum.		q. s. ad sat.

M. et sig.: Three to five drops, in milk, three times a day, after meals. [Each drop represents one grain of the sodium iodid.]

Or:

℞.	gm. or c.c.	
Sodii iodidi	4 to 6	or 3i-3iss
Aquæ	100	fl℥iii

M. et sig.: A teaspoonful, in milk or water, three times a day, after meals.

Or:

℞.	c.c.	
Syrupi acidi hydriodici	100	or fl℥iii

Sig.: One-half teaspoonful, in water, three times a day, after meals.

Patton believes that children do not bear strychnin well, and it should not often be used, and says that "digitalis in the acute stage should only be used if the heart is dilated and its exertion is out of proportion to the condition of the circulation. We must be careful not to mistake an excited heart for a weak one. The tincture is the most available preparation for children. It should not be discontinued abruptly." [We should rather disagree with the advisability of using digitalis in acute inflammations of the heart, even if there is dilatation, believing that the heart muscle is too much weakened by the acute inflammation for a drug that acts so strongly on it, and we believe that tincture of strophanthus is a much safer drug to use in this kind of dilatation.]

Alcohol, he says, may be used in exhaustion or threatened collapse, but it is rarely necessary.

When the fever is high and the heart excited and there is restlessness, he uses bromid of sodium in the following combination:

℞.	gm. or c.c.	
Sodii bromidi	6 to 12	3iss-3iii
Tincturæ aconiti	3	or gtt. v
Spiritus ætheris nitrosi	100	fl℥iii

M. et sig.: A teaspoonful, in water, every two hours, if needed.

If pain is severe he gives cocain with the bromid of soda. He uses the icebag over the heart when it is excited and thumping, and when there is pain in the cardiac region. "The ice should be chopped fine, and the bag so arranged as not to bear too heavily on the chest wall, and should be removed if there is any sudden fall of temperature or sign of collapse. Hot water bags should be used near the lower extremities if the

limbs are cold, especially while the icebag is in use. Local or general bleeding is a measure to be used under the exceptional circumstances of a dilated right side of the heart, and then with great caution."

He wisely warns that any measures that worry or excite the child and that make it cry or severely angry are not worth continuing.

Patton does not discuss the subject of diet during the acute carditic process, but it must be remembered that the diet should be liquid as long as there is fever, and that the amount taken each time should be small; therefore the frequency should be at least every three and sometimes every two hours, care being taken when the child is quietly sleeping not to awaken it for either food or medicine. After the fever has stopped, the nutrition should be pushed, by a gradually increasing diet, with nutritious cereals and eggs, meat perhaps being best avoided for some time, but the bulk of any one meal should be small. Both too cold and too hot liquids should be avoided.

Iron was not mentioned, but the necessity for it as soon as the acute process is passed, especially after the prolonged use of salicylates, is very important. The iron may be administered in the form of the *Eisenzucker* of the German Pharmacopeia, thus:

℞.	gm.		
Tabletas ferri oxidi saccharati, āā.....	2		gr. iii

No. 20.

Sig.: A tablet two or three times a day, after meals.

Or:

℞.	c.c.		
Tincturæ ferri chloridi.....	25	or	fl℥i

Sig.: Five drops in a small glass of lemonade three times a day, after meals.

Or:

℞.	c.c.		
Tincturæ ferri chloridi.....	5		fl℥i
Glycerini	20	or	fl℥iv
Syrupi acidi citrici.....	25		fl℥i
Aquæ	ad 100		ad fl℥iii

M. et sig.: A teaspoonful, in water, three times a day, before meals. (Shake.)

Or:

℞.	gm.		
Quininæ sulphatis	1	or	gr. xv
Ferri reducti	2		gr. xxx

M. et fac capsulas 20.

Sig.: One three times a day, after meals.

Or:

℞.	c.c.		
Syrupi ferri iodidi	25	or	fl℥i

Sig.: Ten drops, in water, three times a day, after meals.

[If this prescription is ordered, there is no need of any other iodid.]

Diet in Enterocolitis of Young Children.

Dr. John L. Morse discusses this subject in the *British Medical Journal* of Oct. 13, 1906.

He advocates in every instance the withholding of all food for at least twenty-four hours, as unless the baby is profoundly debilitated, it will stand such starvation well. The child must, of course, be freely supplied with water during this short starvation period. If the baby vomits, the water would best be given by rectum, and even if only partially retained will still be of benefit.

Barley water or starch water with the addition of milk sugar should be the first food given after the starvation period, then beef juice or beef tea may be tried, and egg albumin water begun, care constantly being taken to give either plain water or these liquids in sufficient amount that there be no water deprivation.

It is best to withhold milk until the temperature is normal, but Morse thinks it should be begun at least by the end of a week, even if the disease is not under control. Modified milk and pasteurized milk and peptonized mixtures may be tried, and buttermilk will often be best tolerated. The strength of such foods should be gradually increased, and the length of time between the feedings increased as the child improves. If in spite of all management or treatment the inflammation persists and the child fails, breast milk from a healthy wet nurse may save the patient.

Buttermilk.

Buttermilk has long been advocated for various conditions, and has lately been advised by Dr. H. C. Carpenter of Philadelphia as a food for infants in gastrointestinal disorders and in infantile atrophy.

"Buttermilk generally contains from ½ to 1½ per cent. of fat, from 2 to 3 per cent. of proteid, and the casein goes into the formation of a lactate. Also, buttermilk contains a higher proportion of albumin than ordinary milk."—London *Lancet*, Oct. 5, 1907, p. 977.

Tablets can now be obtained on the market for preparing buttermilk artificially and quickly, which makes it possible for this treatment to be tried in all cases with the pure milk.

Correspondence

Postgraduate Work in Vienna.

VIENNA, AUSTRIA, Nov. 12, 1907.

To the Editor:—Some readers of THE JOURNAL, and especially those younger ones who intend to study in Vienna, will perhaps be interested in the observations of an American physician here. There are probably eighty-five American doctors studying here at present. Since my last visit an efficient "American Medical Association of Vienna" has been organized and is of great assistance in helping newcomers to get properly started on their studies. By writing to the secretary of this association at Café Klinik, 21 Spital Gasse IX, Vienna, a pamphlet may be obtained, giving the information in condensed form that an American wishes for in deciding where and how to study abroad. Lectures on some live subject are given frequently by some of the Vienna faculty before the association.

The course which many believe to be the best in the world for American students—that on gross pathology in Weichselbaum's pathologic laboratory—is as popular as ever. There is always a waiting list for this course. Twenty men pay approximately $10 each for twenty lectures and have demonstrated to them by an expert the organs from the most interesting and instructive of the many autopsies made daily. For a record of the autopsy is as essential here as the name and sex of the patient, provided only that recovery from his illness does not prevent a perfect record.

The work is at present in charge of Ghon, and an "overflow" course is also given by Stoerk, another of Weichselbaum's assistants. It is an excellent sign that these lectures continue to hold the attention of the young men studying here, for nothing is more important than a full appreciation of the need of sound pathologic knowledge for the practice of our art.

As an example of the variety and abundance of material shown at a single demonstration, in one evening we saw three cases of tumors of the brain, three of cancer of the stomach, one of cerebral hemorrhage, one of cancer of the bladder, and one of ascending infection of the urinary organs from prostatic disease. There were also shown preserved specimens illustrating the subject of brain tumor, and the usual microscopic sections of the tumors shown.

The most popular lecturer on internal medicine continues to be Kovács. He is prominently mentioned in connection with the vacancy to be soon made by the retirement of von Schrötter, who has just passed his seventieth birthday. It is interesting to note that a dozen assistants follow him in his rounds—a compliment not often paid. He takes up his cases in a most exhaustive manner, frequently spending two hours on one

case and going into the finest details of diagnosis. Neither Türk nor Schmidt, formerly popular in the medical courses, are teaching at present.

The buildings of the new General Hospital are nearing completion, across the street from the pathologic department. Some of the present ones date from 1784, so that the contrast is great between the old and the new. The nearness of the new buildings will conduce to the same concentration of material in one great center which constitutes the chief advantage in medical study in Vienna as compared with any other clinic in the world.

We have heard so much in America of the work of Wright and the opsonic theory that I have been interested in noting the extremely conservative attitude of Vienna on the subject. An assistant in Neusser's clinic has, however, just returned from London, and is making preparations to carry on extensive investigations along this line.

There has been a certain evil tendency heretofore to attempt to substitute other methods of laboratory research for the less brilliant and often more difficult procedures of a more purely clinical nature. We ought to impress on the students that the new methods are additions to and not substitutes for our present armamentarium.

Finally, it is gratifying to hear more frequently than formerly the names of the more prominent American authorities—perhaps rather more the surgical than the medical ones. The international medical and surgical congresses have doubtless aided in some degree to bring this about. J. N. HALL, M.D.

The Bedbug May Have Other Hosts Than Man.

DETROIT, Nov. 30, 1907.

To the Editor:—The question has been asked a number of times of late: "Can the bedbug live on other animals besides man?" I answer this positively: "Yes." In this laboratory (the biologic laboratory of Parke, Davis & Co.) we purposely raise tens of thousands of bedbugs, using the guinea-pig as host, for the purpose of testing the efficacy of insecticides, as we find them much more resistant to such than any of our common insects.

It should be noted that there are a number of allied species living on birds, bats and beetles, that are often supposed to be true bedbugs, but are not. I sent a number of the bedbugs raised on our guinea-pigs, to the Bureau of Entomology at Washington, where they confirmed our opinion that these were the genuine *Cimex lectularis*, or human bedbug. The entomologists state that in our northern communities there is but one brood of eggs laid and hatched each year. This is apparently a mistake, if we may judge from our guinea-pigs. While they are more numerous, apparently breeding faster in summer-time, they appear to reproduce throughout the year.

That the bedbug might be a means of transferring disease was pointed out many years ago. Interest in the subject revived when it was shown that malaria, yellow fever and probably bubonic plague were transmitted at least largely through the agency of insects. A little experimental work has been done, but so far as I have been able to find, while there is every probability that the bedbug can transmit disease, there is little in the way of positive proof of this opinion. The bedbug has been suspected of being able to transmit the following diseases: Leprosy, lupus, syphilis, plague, pneumonia, typhoid, relapsing fever, anthrax, some of the skin diseases, and possibly carcinoma.

The world-wide distribution of the bedbug, its nocturnal feeding habits, make it often impossible to avoid its attack. Again, its resistance to starvation and to the various would-be insecticides makes it most difficult to get rid of the pest once it is present. Packard, who was one of our most reliable entomologists, states that these bedbugs will live for a year to a year and a half without food or drink, enclosed in a bottle. These facts may account for their remaining in uninhabited houses for years and their unexpected and apparently unaccountable transference from house to house.

Attempting to show that the bedbug can take a disease from one animal and transfer it to another, I have inoculated guinea-pigs with anthrax, placed them in glass jars, and then placed in the jars several starved bedbugs. On washing and crushing these Bugs the next day, the anthrax germs were easily demonstrated within their bodies, and from such we have cultivated the germs. But this, of course, does not prove that this bedbug, biting another animal, will transmit the disease, although the presumptive evidence is strong. So far I have no positive proof. The difficulty in the way is that the hungry bedbug will gorge himself with the blood of the defenseless animal, and probably will not want to feed again for a week or so. Meantime the germs taken into its stomach, it may be, are digested or in some manner destroyed, and so, except for the possible clinging of germs to its biting apparatus, there might be little possibility of transference of the disease to the second animal.

The conditions in the case of the human being are very favorable, as the bite of the bug usually makes the individual restless, he turns over and often attempts to rid himself of the pest, so that it may well happen that the bug will be only partially satisfied and ready to attack another individual, who may occupy the same room or bed, the next night.

CHARLES T. MCCLINTOCK, M.D.

Hemorrhage from the Bowel Following Appendectomy.

NEW YORK CITY, Nov. 29, 1907.

To the Editor:—I have just read the interesting article by Dr. J. R. Judd of Honolulu on the above subject in THE JOURNAL, November 30, page 1843. He asks this question:

"Why may it not be that in some cases of hemorrhage from the bowel following appendectomy there is a condition similar to that of hematemesis following abdominal operation?" He then quotes Walch's case from Kelly's book, which in all probability was hemorrhage from a gastric or duodenal ulcer since there was vomiting of blood. As the operator has used a simple ligature around the stump of the appendix, and since hemorrhage did not occur until six days after the operation, bleeding from the stump, in my opinion, was precluded.

I have made diligent inquiries by correspondence and personally and before the large assembly of operators, at the meeting at Atlantic City in June, 1907, and have yet failed to obtain a record of a single case of accident occurring after the application of the silk ligature to the stump of the appendix, no other procedure being done.

The single case mentioned by Dr. Judd was evidently not connected with the operation on the appendix. From this it is evident that there is a greater danger from any method of suture which requires the insertion of a needle into the walls of the cecum, without regard to crushing the stump or stitching the open end or by inversion with double rows of superficial sutures, or by clipping off the appendix close to the level of the cecum and rolling in the stump, than by the simple ligation with silk with carbolic acid disinfection of the stump.

The least possible violence to the tissues in securing the best possible result should be accepted as one of the cardinal principles of surgery. In my opinion it is violated in the unnecessary suturing of the cecal wall. In addition to the numerous cases of disaster already reported with the suture method, others have come to my notice but the demonstration is already so positive that their narration is unnecessary.

JOHN A. WYETH.

Nostrum Prescribing.

PUEBLO, COLO., Nov. 28, 1907.

To the Editor:—I spent last month in New York City with some old-time friends in whose home is a small boy. A few days before my arrival this boy was out of sorts, and the father went to their physician for a prescription. Imagine my surprise to discover that the prescription that father received was for a bottle of Castoria—and there it was, literature, wrappers and all.

I looked up the directory of the American Medical Association only to find that this physician is not only a member of the state society, but also of the American Medical Association. And he orders Castoria! Is it because the children cry for it? Riding up Fifth Avenue the other day the elegant home of Castoria's promoter was pointed out, and not far from

that the home of *Medical Brief* Lawrence of "ethical proprietary" medicine fame.

When I stopped in Chicago on my way through, a druggist—an old friend—smilingly handed me a prescription just in to be refilled. It was for Radam's Microbe Killer. The doctor who wrote it is a member of the Chicago Medical Society. I saw that prescription and read it.

While we are discussing the religious press and nostrums, these things throw some side lights distressing to contemplate. Both these physicians are graduates of good metropolitan schools. Why are they not taught therapeutics? The war needs to begin close at home when it comes to the fight against nostrums.

JOHN INGLIS, M.D.

Book Notices

STUDIES FROM THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. Reprints. Volume VI. Paper. Pp. 407. Lancaster, Pa.: New Era Printing Co., 1907.

The first part of this work consists of a description of the buildings of the Rockefeller Institute, together with the addresses delivered at the opening of the laboratories in New York, May 11, 1906, respectively by Dr. M. L. Emmett Holt, Dr. William H. Welch, President Nicholas Murray Butler of Columbia University, and President C. W. Elliott of Harvard University. From the description of the buildings, which are three in number, each independent of the other, namely, the laboratory building, the animal house and the power house, the completeness of the institute is amply demonstrated. There are administration, library and board rooms; chemical laboratory, hydraulic pump, drying apparatus, refrigeration room, photographic suite, lunch room, kitchen and living suite for workers who may be compelled by their work to spend the night at the laboratory. The animal house provides all conveniences for the keeping of all kinds of animals, except dogs, which are kept on the roof of the laboratory building. At first it was planned to create a number of externe scholarships or fellowships, to be distributed in existing laboratories throughout the country, but it soon became evident that the best results could not be obtained in this manner. In due course it was decided to centralize the work, and the present building is the result.

The fully organized staff will consist of a chief director and a head for each of the different departments. Each head will have his associate and corps of assistants. The heads of departments, associates and corps of assistants, it is expected will constitute the permanent staff of the institute. The other workers will be less closely attached. Besides, there are contemplated scholarships and fellowships for workers who may come for a limited period; and finally, it is expected to provide for a limited number of voluntary workers who will be given the facilities of the institute for working out, under supervision, their own problems. All the addresses were admirably suited to the occasion, and we regret that we are unable to quote liberally from them. The remaining portion, the bulk of the book, consists of reprints of scientific studies by students and fellows of the institute, collected from various journals in which they first appeared, and bound together.

THE SENSE OF TOUCH IN MAMMALS AND BIRDS, with Special Reference to the Papillary Ridges. By Walter Kidd, M.D., F.Z.S. 164 Illustrations. Cloth. Pp. 176. London: Adam and Charles Black, 1907.

With the large and ever increasing amount of purely medical works which the practitioner is expected to keep in touch, it is hardly fair to advise him to read much in the way of zoologic literature. When monographs on comparative anatomy are as interesting and as practical as the book whose title has just been given, however, that medical man suffers a distinct loss who does not devote a short time to its perusal. Dr. Kidd has taken up not only the macroscopic but the microscopic anatomy of the parts involved in tactile sensibility in the lower animals and has discussed them in their relation to the physiology of the human touch sense. His comparison of the papillary ridges and papillæ of the corium with such varied developments of the tactile sense as are seen in the surface of animal tongues, in their tactile hairs (especially the vibrissæ) on the lips of the cat tribe, the antennæ of insects, the extremely sensitive noses of the moles, and the tactile organs of the wings and ears of bats. It is in the bat tribe, says the author, that the sense of touch seems to be developed to almost perfection. The author has found that in mammals the papillary ridges are well developed in the plantar and palmar sections of most of the mammals, but that they are practically absent in marsupials, rodents, carnivores and insectivores. He does not regard tactile sensibility in birds as well developed or of as much importance as in mammals, although he has examined many of the former. The work is fairly well illustrated with many successful half-tone reproductions of microphotographs and a large number of electrotypes in the text. Finally, a complete list of the literature on the subject is given as a useful appendix.

NIERENDIAGNOSTIK UND NIERENCHIRURGIE, von Dr. G. Kapsammer. I. Teil. Mit 29 Abbildungen im Texte. Paper. Pages 432. II. Teil. Mit 34 Abbildungen im Texte. Paper. Pages 567. Wien und Leipzig: Wilhelm Braumuller. K. u. k. Hof- und Universitäts-Buchhändler, 1907.

These volumes are a monument to the industry of the author and will without doubt prove an acquisition of value to the surgeon who deals specially with the kidneys, while their general conclusions ought to be interesting and instructive to the general practitioner. The first volume deals with the methods of diagnosis, taking up first the older methods and later giving especial consideration to the newer methods proposed for the estimation of the functional power of the kidney. The methods of cryoscopy are weighed in the balance and found wanting. The following is the author's conclusion: "Great as is the interest of cryoscopy of the urine and of the blood from a theoretical standpoint, its significance in practice is equally small. Especially in the surgical diagnosis of kidney affections we can dispense with both. They give no information of practical value that is not given by the specific gravity, the determination of which is much simpler." p. 63. On the other hand, the phloridzin test is regarded as the most reliable of the newer methods. A large part of the first volume is occupied with the technic of ureteral catheterization and with a description of the author's personal researches on this subject. The second volume deals with the surgical diseases of the kidney. This is largely a record of personal experience abundantly illustrated with the history of individual cases. The ninth chapter deals with nephritis, but only with reference to the utility of the phloridzin test. The work is well illustrated and, with the exception of the paper binding, is a sample of excellent book making.

THE DANCING MOUSE. By Robert M. Yerkes, Ph.D., Instructor in Comparative Psychology in Harvard University. Cloth. Pp. 290. Price, $1.25. New York: The Macmillan Co., 1907.

This interesting little book is the first volume of the "Animal Behavior Series." The first twelve chapters comprise an essay which was awarded the 1907 Cartwright prize of the Alumni Association of the College of Physicians and Surgeons of New York. The preface states that the book is the result of a series of observations begun on a pair of dancing mice presented to the Harvard Psychological Laboratory. These little animals came from Japan, where they are kept as house pets for children. In that country they are called "Nankin nesumi," or the Chinese mouse, indicating an early origin in China. Their ultimate derivation and relation to other breeds of mice are unknown. Dr. Yerkes' book is a most interesting example of modern laboratory methods and can be read with profit by any one, on account of the accurate methods of observation and careful deductive reasoning which it shows. An elaborate painstaking system of experiments was carried on with over 400 mice, with the object of determining muscular co-ordination, structural peculiarities, strength of the special sense organs, habit formation, educability, and strength of memory of these little animals. Some experiments were also undertaken along the line of inherited peculiarities. Dr. Yerkes states that, owing to an unfortunate epidemic of intestinal trouble which broke out among his mice, all of them except a single pair died within a few weeks, thus putting a stop to the experiments which he hoped to complete. The work is, therefore, really only a pre-

liminary study, but it will be read with much interest by all students of comparative psychology.

BILHARZIOSIS. By Frank Cole Madden, M.D., Melb.; F.R.C.S., Eng.; Professor of Surgery Egyptian Government School of Medicine; Senior Surgeon Kasr-el-Ainy Hospital, Cairo. Illustrated. Cloth. Pp. 78. Price, $2.50. New York: William Wood & Co., 1907.

This work contains a very full description of the effects of infection by this parasite. The first chapter is devoted to the worm, which is as well described in many other places, but the subsequent chapters are of most interest, because in them are fully discussed the pathologic changes in the urinary tract, intestines, female generative organs and skin. The channel by which infection takes place is not certainly known. It is probable that either the gastrointestinal tract or skin is the tissue first penetrated and Madden evidently regards the skin as the one most probably first attacked, because the parasite is easily killed by weak solutions of hydrochloric acid such as it would encounter in the stomach, and because the diseases caused by it are almost exclusively prevalent among those who are habitually walking through irrigated fields and puddles of water with bare feet. That the parasite passes through a sporocystic stage in man is probable, but it has not been demonstrated. The ova of the parasite is the immediate cause of pathologic changes in the tissues. In mucous membrane hypertrophy is the rule. It may be diffuse or circumscribed, producing a papilloma. In connective tissue it ultimately causes the formation of dense fibrous masses sometimes of considerable size and resembling both grossly and microscopically "typical scirrhus cancer." The text is abundantly illustrated by good photographs, for the most part, of histologic changes in various tissues.

A DICTIONARY OF MEDICAL DIAGNOSIS. A Treatise on the Signs and Symptoms Observed in Diseased Conditions. For the use of Medical Practitioners and Students. By Henry L. McKisack, M.D., etc., Physician to the Royal Victoria Hospital, Belfast. Cloth. Pp. 583. Price, $3.50. New York: William Wood & Co., 1907.

This work aims to occupy a hitherto unoccupied field; it is a dictionary of "the language of signs as presented in the bodies of our patients." The author publishes in alphabetical order and in extended form his teaching notes on the significance of various phenomena considered from the observer's point of view, with such reference to the anatomy and pathology involved as shall be necessary to the full comprehension of the nature and origin of individual symptoms, observing in what respect the processes to which the symptom is attributed differ from those occurring in the healthy body. It is a dictionary not of diseases but of the signs and symptoms attendant on disease so arranged as to be easy of access. The reader will be edified by the description of the symptomatic process signified by the terms that he encounters in the literature; the practitioner by information leading him correctly to interpret the signs he notes in the case before him. Several of the articles—those on leucocytosis, sputum, pulse, urine—are remarkably full, yet essentially of a ready reference character. The style is clear, concise, yet not bald. The typography is excellent.

DIAGNOSIS AND MODERN TREATMENT OF PULMONARY CONSUMPTION, With Special Reference to the Early Recognition and Permanent Arrest of the Disease. By Arthur Latham, M.A., M.D., Oxon., etc., Physician and Lecturer on Medicine at St. George's Hospital. Cloth. Pp. 257. Price, $2.00. New York: William Wood & Co., 1907.

The pathologic portion is very brief and, while much more might have been said on the subject, what is here said gives a fair general idea of the principal diagnostic points and methods and of the common types of disease. Four-fifths of the work is devoted to the important subjects of prophylaxis and treatment, and here the matter is generally excellent. Latham lays the usual stress on the open air and rest treatments, and especially emphasizes the importance of the latter and the danger of overdoing, especially in certain stages of the disease. He says "more people suffering from tuberculosis have been killed by overexertion than by anything else." He follows Brehmer in the view of the advisability of seclusion in a large percentage of cases of consumption. As regards the opsonic treatment he reserves his absolute approval, holding that our knowledge of the significance of the opsonic index is as yet inefficient and the technic is faulty and open to error. The medicinal treatment of consumption, or rather of its special symptoms, is well treated so far as it goes. As regards prognosis, he says, the resistance of the individual is by far the most important factor to be considered; in any case the prognosis can only be approximate. The make-up of the book is very good and it seems strikingly free from typographic errors.

MEDICAL DIAGNOSIS. A Manual for Students and Practitioners. By Charles Lyman Greene, M.D., Professor of Theory and Practice of Medicine in the University of Minnesota. With Seven Colored Plates and 230 Illustrations. Flexible Leather. Pp. 683. Price, $3.50. Philadelphia: P. Blakiston's Son & Co., 1907.

The subject of medical diagnosis is so vast, and its thorough comprehension involves the mastery of so many details, that it is impossible to condense even the essentials into the limitations of a manual, yet Dr. Greene has succeeded in presenting the subject in a manner that will appeal to the student, who, as a rule, has only time to grasp generalities, and to the practitioner who wishes to refresh his memory on the subject preparatory to a competitive test. The entire field of medical diagnosis is gone over briefly but concisely, the author avoiding the discussion of thories and methods, except such as he has found to be valuable in practice. The marginal notes and running headlines permit of quick reference, but for more detailed information a larger and more complete work must be consulted. The author does not pretend to offer anything new, nor is the method of presentation original. The book is one of that large class of books written with the belief that the student will find their use time saving, a belief which is not shared by all.

RATIONAL AND EFFECTIVE TREATMENT OF HIP DISEASE. By P. B. Bennie, M.A., M.D., etc., President Melbourne Medical Association, 1896. Founded on Experience of Numerous Cases in Hospital Practice During 28 Years. Compiled by A. B. Bennie, M.A., M.B., etc. Cloth. Pp. 108. New York: William Wood & Co., 1907.

This volume is a plea for the exclusive use of the Thomas hip splint in the treatment of tuberculosis of the hip. Making, fitting and use of this splint are minutely explained. The splint, as used by the author, is recommended even in cases of extreme and long-standing deformity. Traction at any time in the disease is condemned. The author believes that practically all cases of deformity and apparently bony ankylosis could be straightened by the proper use of the Thomas splint alone. The benefit of some functionating of the limb during part of the treatment, and the value of permanent abduction of the hip after healing are not considered. It may be questioned whether all the reported cases of perfect functional recovery from coxitis were tuberculous.

CAUSE AND PREVENTION OF BERIBERI. By W. Leonard Braddon, M.B., B.S., F.R.C.S., State Surgeon, Negri Sembilan, Federated Malay States. Cloth. Pp. 544. Price, $6.00. New York: Rebman Company, 1907.

This volume is devoted to a demonstration of the cause of beriberi which the author concludes is due to a poisoned rice, the poison being elaborated in the grain by some sort of parasite that affects the outer layers chiefly. Based on this view of the etiology of the disease, which he claims is positively proved, the prevention becomes very simple. Rice must be abstained from or taken in moderate amounts only and its quality properly supervised. The substance of the volume was first brought out in the form of a report presented in 1904, but the important results of recent contributions to the subject have been incorporated in the text.

CLINICAL LECTURES ON NEURASTHENIA, by Thomas D. Savill, M.D., London, Physician to the West End Hospital for Diseases of the Nervous System. Third Edition, Revised and Enlarged. Cloth. Pp. 216. Price, $1.50 net. New York: William Wood & Co., 1907.

A number of changes appear in this edition, the parts dealing with diagnosis, pathology and treatment have been enlarged and a new lecture on etiology and prognosis, based on an analysis of cases in the author's private practice, has been added. The author reiterates his views on autointoxication as a cause of the condition which are not so much in opposition to those generally held as the extent of his argument would seem perhaps to indicate. There is appended a bibliography of many of the leading works on the subject that have appeared in late years.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. For Students and Practitioners. By James Magoffin French, A.M., M.D., Formerly Lecturer on the Theory and Practice of Medicine, Medical College of Ohio. Third, Revised Edition. 135 Illustrations, 25 Being Full-Page Plates in Tints and Colors. Cloth. Pp. 1253. Price, $5.00. New York: William Wood & Co., 1907.

A complete revision has brought this work up to date with a necessary increase in size of more than one-half. Brevity has been favored, however, wherever possible. An introductory part dealing with general pathology and a final section on laboratory methods of diagnosis increase the value of the book.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

COMPOSITION OF NATHAN TUCKER'S ASTHMA CURE.

DUNKIRK, N. Y., Nov. 21, 1907.

To the Editor:—I shall be very glad to receive information as to the composition of the so-called asthma cure or atomizer fluid sold by Nathan Tucker, Mt. Gilead Ohio. This usually is introduced by agents who induce the afflicted asthmatic to take the atomizer and fluid, try it and, if not satisfactory, to return it in two weeks or send $12. Renewals of fluid are at $1 an ounce. The patient is relieved, but becomes so addicted to its use that, as they say, though an exorbitant price to pay, they can not get along without it and would have to have it if it were three or four times the amount asked. I have noted that the pupils are widely dilated after continued and frequent spraying of the nose and throat, so I presume a part of the fluid is atropin or belladonna, but I suspect some harmful ingredient of a habit-forming nature. M. S. COXE.

ANSWER.—O. Anselmino, in an article in the *Pharmaceutische Centralhalle*, Dec. 6, 1906, an abstract of which appeared in THE JOURNAL, March 16, 1907, page 960, states that at one examination of this preparation he found hydrocyanic acid present, but a second sample contained none. The first sample also contained a nitrite, but no potassium nitrite. The amount of alkaloid was 1 per cent., the greater part of which was cocain. Two other analyses of the preparation differ materially. According to Anselmino that of Aufrecht, made in 1903, gives the following composition:

Cocain hydrochlorate	1 per cent.
Potassium nitrate	5 per cent.
Glycerin	35 per cent.
Bitter almond water	35 per cent.
Water	25 per cent.
Vegetable extractive (probably from stramonium)	4 per cent.

Bertram in 1905, on the other hand, found:

Atropin sulphate	1 per cent.
Sodium nitrate	4 per cent.
Vegetable extractives dissolved in water with some glycerin	0.52 per cent.

The inconsistencies in the analyses, Anselmino ascribes partly to the fact that proprietary remedies often vary in their composition from time to time and partly to difficulties inherent in the analysis of complex mixtures. While atropin and cocain can be identified by characteristic qualitative tests, their quantitative determination is difficult and, when the quantities are so small, it is practically impossible. Bertram has proposed the following formula as a substitute for the inhalation liquid:

Atropin sulphate	gr. ii	|15
Sodium nitrite	gr. viii	|6
Glycerin	gr. xxx	2|
Distilled water, to make	ʒss	15|

Mix and dispense in a bottle of dark glass. To be sprayed from an atomizer and inhaled for three minutes.

Anselmino thinks, however, that a I per cent. solution of atropin is not safe for frequent inhalation, as atropin poisoning may occur.

ALEXANDER CANCER CURE.

WHITE BEAR LAKE, MINN., Nov. 8, 1907.

To the Editor:—Will you kindly inform me of what the "Alexander Cancer Cure" consists? You exposed this nostrum some time ago, but I am unable to find the account.

M. P. HOPKINS, M.D.

ANSWER.—We answered a similar query in THE JOURNAL, July 27, 1907, page 345. According to the formula furnished by the promoters of the nostrum: "The fluid which forms the basis of the Alexander treatment is a new compound derived from a union of hydrocarbons, forming a chemical solution represented by the following formula: $C_{27}H_{17}O_2$, to which are added essential oils." This statement in regard to the composition of the remedy is meaningless. It is made with the evident intent to mislead, to give the impression, by the use of chemical terms and phrases, that, as a result of much original research, an entirely new chemical substance has been isolated. Fortunately for the profession (unfortunately for the promoters) the circular contains such evident ear-marks of quack literature that few will be humbugged by it. To a chemist the "formula" of the supposedly "new compound derived from a union of hydrocarbons" is sufficient evidence of the nature of the stuff, for to him $C_{27}H_{17}O_2$ spells "impossible." One of the fundamental laws of chemistry, the "law of even number of atoms," says that in carbon compounds "the sum of the atoms with uneven valency (hydrogen, the halogens, nitrogen, phosphorus, etc.) must always be an even number." Compounds having the formula $C_{27}H_{18}O_2$ may, and do exist, but much evidence would be required to prove the existence of a compound having the formula $C_{27}H_{17}O_2$. The "formula" is a fake. Comment on the methods of the promoters will be found in THE JOURNAL, July 6, 1907, page 48, and July 13, page 158.

IS VARIOLINUM A LEGAL SUBSTITUTE FOR VACCINATION?

PITTSBURG, Nov. 21, 1907.

To the Editor:—Certificates of successful vaccination have been issued by some physicians after giving variolinum or other equally inert substances internally. We would be very grateful to you for any information you can give us in answer to the following questions:

1. What is the legal meaning of vaccination? (If possible cite decision giving such definition.)
2. What is variolinum?
3. Has there been any litigation involving the use of variolinum as a substitute for vaccination, and what has been the outcome of such litigation?

BRADFORD A. BOOTH, M.D.,
Medical Inspector, Dept. Public Safety.

ANSWER.—1. We know of no legal decision giving the meaning of vaccination. As defined by the dictionary, vaccination is the inoculation of the body with vaccine virus taken from a heifer or cow known to have vaccina or kinepox. To be protective against smallpox, such inoculation should produce in the person inoculated vesiculation, umbilication, pustulation, a limited inflammatory area about the pustule, and more or less febrile reaction. Such a vaccination will leave a scar. This scar, with the clinical history of the vesicle producing the scar, is conclusive evidence of a protective vaccination. We know of no other mode of vaccination against smallpox. The Chicago Department of Health recognizes no other method, and we know of no board of health giving sanction to any other method.

2. "Variolinum," according to Blackwood's "Materia Medica" (homeopathic) is "a nosode of smallpox." The same author says it is a "trituration of matter from a ripe smallpox vesicle." It is triturated with sugar of milk and can be procured in powder form, in compressed tablets, and in liquid dilutions. The dose as given in the book is the 30th dilution and up. A few high potency homeopathic doctors give this substance with the idea of immunizing the subject against smallpox. A child who takes this substance internally is said to be "potentized." The great mass of homeopathic practitioners do not recognize this method as efficacious against smallpox. Leading members of that school repudiate the claim and practice as worthless. Neither of the homeopathic pharmacopeias in use mention the substance. We have no evidence that "potentization" protects from smallpox. On the contrary, information from the Chicago Department of Health states that on numerous occasions "potentized" children have been vaccinated and typical results secured from such vaccination, which, of course, is proof that the subject of "potentization" was not protected against smallpox.

3. We find no record of legislation involving the use of "variolinum."

OWNERSHIP OF PRESCRIPTION.

————————, MICH., Nov. 21, 1907.

To the Editor:—There is a discussion here regarding the ownership of prescriptions. Kindly give me what information you can.

W. M.

ANSWER.—The ownership of the physician's prescription is a question which has never been decided by the higher courts. In one case in Ohio it was decided that the files of prescriptions in a drug store belonged to the druggist, and that the prescriptions were not a part of the general stock of the drug store, and, therefore, could not be held under the mortgage covering the stock in the store. In Missouri, under a statutory provision, prescriptions are required to be preserved by druggists, and therefore are held, to an extent, to become public papers. (State vs. Davis, 108 Mo., 666.) The case of the R. C. Stuart Drug Co. vs. Hirsch, 50 Southwestern Reporter, 583, decided by the Court of Civil Appeals of Texas, March 22, 1899, expresses the opinion that a druggist has a property right in prescriptions. The court says that there was testimony in this case

tending to show that there was a qualified right to the use of the prescription in the person depositing it; if asserted; but otherwise, and between the druggist and third persons, the druggist was entitled to it. The general trend of opinion, which seems to be the just one, is that the prescription is an order from the physician to the druggist, but the patient who pays for the prescription has an undoubted right of property in it until he surrenders it to the druggist to be filled. Thereafter the prescription belongs to the druggist to keep on file for his own protection and for the protection of the public and the physician.

LITERATURE ON STAMMERING.

KASLO, B. C., Oct. 22, 1907.

To the Editor:—I have been trying to get some information regarding stammering and its cure, so far without success. Can you furnish, in the Queries and Minor Notes Department, information as to a reliable book on stammering and its treatment?

A. W. BAGNALL.

ANSWER.—Two books that you will find useful in the study of stammering are: "The Disorders of Speech," by Dr. John Wyllie, published by Oliver & Boyd, Tweeddale Court, Edinburgh, Scotland, and "Gymnastics of the Voice and Cure of Stuttering and Stammering," by Oskar Guttmann, published by Edgar S. Werner, New York. Some articles in medical papers on the subject are: "How to Prevent Stammering," G. Hudson-Makuen, Philadelphia, *Philadelphia Medical Journal*, March 30, 1901. "Curious Laryngeal Lesion and Unusual Form of Stammering," G. Hudson-Makuen, *Laryngoscope*, June, 1905. "Stammering and Stuttering," J. M. Brown, Chicago, *Oklahoma Medical News-Journal*, February, 1905. "Treatment of Stammering," E. L. Kenyon, Chicago, *Chicago Medical Recorder*, February, 1906. "Treatment of Stammering," E. L. Kenyon, *Medical Record*, June 16, 1906. "Stammering and Its Treatment," R. A. Worthington, *Lancet*, Sept. 22, 1906. "Stammering and Importance of Early Treatment," G. Hudson-Makuen, *Annals of Otology, Rhinology and Laryngology*, December, 1906. "Physiology of Language and Its Relation to the Treatment of Stammering," G. Hudson-Makuen, *New York Medical Journal*, Dec. 29, 1906. "Treatment of Stammering," S. W. Scripture, *Medical Record*, May 11, 1907.

TETANIC SYMPTOMS OF OBSCURE ORIGIN.

——, ILL, Nov. 14, 1907.

To the Editor:—Will you kindly state the cause of the tetanic symptoms in the following case? On November 8, about 9 p. m., a female child of 10 months, previously in excellent health, was suddenly seized with symptoms resembling spasmodic croup. A physician saw her one hour later, the mucous membranes of throat and nose were normal; temperature normal; child very restless and unable to sleep. No history of any wound. The usual antispasmodic remedies were prescribed. Nov. 9 and 10, patient remained in same condition all day. At 4 p. m., November 10, with condition practically unchanged, 4,000 units of antitoxin were injected into right buttock under strictest aseptic precautions; the needle wound was sealed with collodion. Three hours later the child became stupid, the temperature rose to 104 F., abdominal muscles became rigid; opisthotonos became marked with tetanic twitchings; the body was bathed in perspiration; movement of jaws and arms caused no response, but movement of the lower limbs or head caused the child to rouse up and cry. This condition lasted for 36 hours, with gradual recovery from all symptoms. N. K.

ANSWER.—It is impossible to say with definiteness what was the cause of the symptoms exhibited in this case. The symptoms differ from those of tetanus in the absence of trismus, and in the latter respect approach those produced by strychnin, but their duration is sufficient to prevent their reference to strychnin. The most reasonable supposition seems to be that they were due to some form of autointoxication, probably of intestinal origin, of which the spasm of the larynx was the first indication.

DIET IN THE DETERMINATION OF SEX.

ORANGEBURG, S. C., Nov. 22, 1907.

To the Editor:—It is said that by certain diet and treatment it is possible to make the sex of the unborn child either male or female as desired. Can you tell me where I can find any literature on the subject? J. A. CLIFTON, M.D.

ANSWER.—The following references may be of interest: C. W. Conan, *Charlotte Medical Journal*, April, 1901; J. S. Freeborn, *Canadian Practitioner and Review*, August, 1902; L. Koplinski, *Medical News*, Nov. 22, 1902; B. S. Schulze, *Centralblatt für Gynäkologie*, xxvii, 1; W. M. Derker, *Medical Times*, March, 1903; C. Benda, *Deutsche medizinische Wochenschrift*, xix, 39; F. J. Taussig, *St. Louis Medical Review*, April 2, 1904; Pehaur, *Monatsschrift für Geburtshilfe und Gynäkologie*, xxv, 4. The theory that diet may influence the sex has been pretty thoroughly thrashed out in the literature of the last few years. It is probable that the theory, as usually formulated, is not worthy of serious consideration. It is generally believed that the sex is established shortly after impregnation and that the influence of diet or other treatment during gestation is, therefore, *nil*.

TO DISGUISE CASTOR OIL.

——, IND., Nov. 22, 1907.

To the Editor:—How is tasteless castor oil made and is it efficient? J. J.

ANSWER.—The following formula was submitted by Dr. John Ritter and published in THE JOURNAL, April 14, 1906, page 1123, as yielding a sweet, pleasant and palatable form of castor oil:

Saccharini	gr. ii	12
Olei menthæ piperitæ	gtt. v	30
Alcoholis q. s. M. fiat sol. et adde:		
Olei ricini	ʒviii	240

Dr. Charles J. McGee states (THE JOURNAL, June 2, 1906, page 1725), that the following method of administering castor oil masks its disagreeable taste: Place a tablespoonful of castor oil in an ordinary glass and to this add the juice of a medium-sized lemon and stir. Then add a little ordinary baking soda (a lump about the size of a large bean), stirring quickly, and drink while effervescent. Formulas for castor oil emulsions were published in THE JOURNAL, Oct. 19, 1907, page 1381.

The Public Service

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Nov. 29, 1907:

SMALLPOX—UNITED STATES.

California: Bakersfield, July 1-Nov. 15, present; Los Angeles, Nov. 10-16, 1 case; Oakland, Oct. 1-31, 20 cases; San Francisco, Nov. 3-16, 2 cases; Tehachapi, June 1-Nov. 16, 125 cases.
Florida: Duval County, Mandarin, Nov. 10-16, 1 case.
Illinois: Belleville, Nov. 10-16, 3 cases; Chicago, Nov. 17-23, 2 cases; Peoria, Nov. 13-19, 4 cases; Rockford, Oct. 1-31, 1 case; Sherman, Oct. 28-Nov. 5, 5 cases; Springfield, Nov. 15-21, 15 cases.
Indiana: Elkhart, Nov. 10-23, 11 cases.
Iowa: Ottumwa, Nov. 17-23, 6 cases.
Kansas: Kansas City, Nov. 10-23, 2 cases.
Louisiana: New Orleans, Nov. 10-16, 1 case.
Michigan: Grand Rapids, Nov. 10-16, 9 cases.
Minnesota: Winona, Nov. 10-16, 2 cases.
Nebraska: Lincoln, Oct. 1-31, 1 case.
New York: Buffalo, Oct. 1-31, 1 case, 1 death; New York, Nov. 2-16, 2 cases.
North Dakota: Ramsey County: Devils Lake, Oct. 1-Nov. 14, 48 cases; Terry, present; Penn, present.
Ohio: Cincinnati, Nov. 16-22, 2 cases.
Tennessee: Nashville, Nov. 17-23, 7 cases.
Utah: Salt Lake City, Oct. 1-31, 1 case.
Washington: Spokane, Nov. 10-16, 7 cases; Tacoma, 2 cases.
Wisconsin: La Crosse, Nov. 10-16, 4 cases; Milwaukee, Nov. 3-16, 2 cases.

SMALLPOX—FOREIGN.

Africa: Algiers: Algeria, Oct. 1-31, 2 deaths; British South Africa: Cape Town, Oct. 13-19, 1 case; East London, Oct. 13-19, 1 case.
Austria: Vienna, Oct. 19-Nov. 2, 2 cases, 1 death.
Brazil: Para, Oct. 25-Nov. 9, 42 cases, 31 deaths; Pernambuco, Sept. 1-15, 82 deaths; Rio de Janeiro, Sept. 29-Oct. 20, 30 cases, 15 deaths.
China: Hongkong, Sept. 28-Oct. 5, 1 case, 1 death; Shanghai, Oct. 7-20, 6 cases, 16 deaths (cases foreign, deaths native).
Egypt: General, Sept. 17-30, 19 cases, 5 deaths.
France: Paris, Nov. 1-9, 3 cases.
India: Calcutta, Sept. 29-Oct. 5, 2 deaths; Madrid, Oct. 12-18, 1 death.
Italy: General, Oct. 25-31, 83 cases; Catania, Nov. 1-7, 1 death; Genoa, Sept. 1-30, 1 death.
Japan: Kobe, Oct. 13-26, 11 cases, 2 deaths.
Malta: Valetta, Nov. 2, 1 case.
Mexico: Aguas Calientes, Nov. 4-17, 4 deaths.
Portugal: Lisbon, Oct. 28-Nov. 2, 2 cases.
Russia: Odessa, Oct. 20-26, 1 case; Riga, Oct. 21-Nov. 9, 4 cases; St. Petersburg, Oct. 13-19, 1 case; Warsaw, Sept. 15-21, 6 deaths.
Spain: Almeira, Oct. 1-31, 10 deaths; Barcelona, Nov. 1-10, 2 deaths; Valencia, Oct. 28-Nov. 3, 22 cases, 5 deaths.
Turkey in Asia: Bagdad, Sept. 30-Oct. 12, present.

CHOLERA.

China: Tientsin, Oct. 5, 1 case.
India: Calcutta, Sept. 29-Oct. 5, 23 deaths; Madras, Oct. 12-18, 13 deaths; Rangoon, Oct. 6-12, 1 death.
Japan: Kobe, Oct. 7-26, 35 cases, 21 deaths; Yokohama, Oct. 22-28, 4 cases, 5 deaths.
Russia: General, Oct. 15-22, 1,072 cases, 387 deaths.

YELLOW FEVER.

Brazil: Manaos, Nov. 2, 2 deaths; Para, Oct. 26-Nov. 9, 13 cases, 9 deaths.
Cuba: Habana Province: Habana, Nov. 20, 1 case, from San Nicolas; Matansas Province, Alacranes, Nov. 21-24, 1 case, 1 death; Cienfuegos, Nov. 20, 4 cases; Union de Reyes, Nov. 29, 1 case; Santa Clara Province: Santa Clara, Nov. 20, 1 case, 1 death.

PLAGUE—UNITED STATES.

California: San Francisco, Nov. 17-Nov. 28, 7 cases, 4 deaths.

PLAGUE—FOREIGN.

Algeria: Oran, Nov. 1, present; Phillippeville, Oct. 9-19, 3 cases, 2 deaths; Nov. 1, still present.
Australia: Brisbane, Sept. 12-21, 1 case, 1 death (on S. S. *Marceba*); Cairns, Sept. 20-23, 2 cases, 2 deaths.
Brazil: Pernambuco, Sept. 1-15, 1 death; Rio de Janeiro, Oct. 1-20, 29 cases, 4 deaths.

China: Hongkong, Sept. 29-Oct. 5, 1 case, 1 death.
Great Britain: Glasgow, Oct. 17-23, 1 case.
India: General, Sept. 29-Oct. 5, 13,341 cases, 9,643; Calcutta, Sept. 29-Oct. 5, 13 deaths; Rangoon, Oct. 6-12, 18 deaths.
Japan: Osaka, Oct. 5-19, 48 cases, 38 deaths, Nov. 19, still present.
Peru: Callao, Oct. 17-23, 6 cases, 1 death; Ferrenhafe, 2 cases; Lima, 5 cases, 4 deaths; Mollendo, 1 case, 1 death; Paita, 2 cases, 2 deaths; Piura, 2 cases; Trujillo, 6 cases, 6 deaths.
Tunis: Tunis, Nov. 2, present.
Turkey in Asia: Dikeli, Oct. 13, 1 case; Smyrna, 1 case.

Army Changes.

Memorandum of changes of stations and duties of medical officers, week ending, Nov. 30, 1907:

Blanchard, R. M., asst.-surgeon, on arrival at San Francisco, will proceed to Fort Wingate, N. M., for station.

Brown, H. L., asst.-surgeon, granted 10 days' leave of absence.

Munson, E. L., surgeon, and Field, P. C., asst.-surgeon, appointed members of a board of officers to meet at Rock Island Arsenal, Rock Island, Ill., Dec. 9, for the examination of officers of the Ordnance Department, for promotion.

Woodruff, C. E., surgeon, on the discontinuance of Camp Capt. John Smith, Jamestown Exposition, Va., about Dec. 1, 1907, will accompany the 23d Infantry to Madison Barracks, N. Y. On completion of this duty will proceed to station, Plattsburg Barracks, N. Y.

Webber, H. A., asst.-surgeon, granted 30 days' leave of absence.

Torney, G. H., deputy surgeon general, having completed the duty for which he was ordered to this city, will return to his proper station.

Kilbourne, E. D., asst.-surgeon, granted two months' leave of absence.

Johnstone, E. K., contract surgeon, arrived at Presidio of San Francisco, for duty, from Camp Yosemite, Cal.

Whitney, Walter, contract surgeon, returned to Fort McPherson, Ga., from three weeks' practice march.

Coffey, A. McD., contract surgeon, granted leave of absence for one month.

Hereford, J. R., contract surgeon, granted leave of absence for one month.

Hess, J. H., examining and supervising dental surgeon, granted leave of absence for two months.

Stallman, G. E., dental surgeon, left Fort Clark, Texas, and arrived at Fort Sam Houston, Texas, for duty.

Boak, S. D., dental surgeon, arrived at Newport News, Va., on leave of absence from Cuba, until December 31.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Nov. 30, 1907:

Thomas, G. C., acting asst.-surgeon, appointed acting assistant-surgeon from Nov. 20, 1907.

Bucher, W. H., surgeon, detached from the Naval Hospital, Boston, and ordered to report to the surgeon general, Navy Department, for special temporary duty, and thence to the Naval Hospital, New Fort Lyon, Colo.

Webb, U. R., P. A. surgeon, ordered to command the Naval Hospital, San Juan, P. R.

Taylor, E. C., P. A. surgeon, detached from duty at the Naval Hospital, New York, N. Y., and ordered to the Naval Hospital, New Fort Lyon, Colo.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Nov. 27, 1907:

Kerr, J. W., asst.-surgeon-general, detailed to attend the conference of the National Legislative Council and the Committee on Medical Legislation of the American Public Health Association, Chicago, Ill., Dec. 10-13, 1907.

Wasdin, E., surgeon, granted leave of absence for 21 days from Dec. 20, 1907.

Williams, L. L., surgeon, detailed as member of a Revenue-Cutter retiring board at Baltimore, Dec. 2, 1907.

Stoner, J. B., surgeon, granted leave of absence for 20 days from Nov. 24, 1907.

Burkhalter, J. T., P. A. surgeon, detailed as member of a Revenue-Cutter retiring board at Baltimore, Dec. 2, 1907.

Sweet, E. A., asst.-surgeon, relieved from duty at Fort Stanton, New Mexico, and directed to proceed to San Diego, Cal., and assume charge of the service at that port.

Hallett, E. B., asting asst.-surgeon, granted leave of absence for 3 days from Nov. 27, 1907.

Linley, W. J., acting asst.-surgeon, granted leave of absence for 30 days from Dec. 2, 1907.

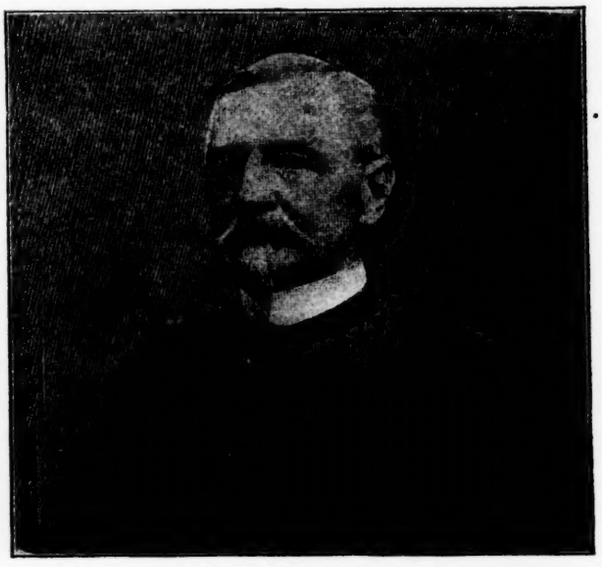
Onuf, B., acting asst.-surgeon, granted leave of absence for 1 day, Oct. 16, 1907, under Paragraph 210, Service Regulations

Stearns, H. H., acting asst.-surgeon, granted leave of absence for 1 day, Oct. 7, 1907, under paragraph 210 Service Regulations.

Wetmore, W. O., acting asst.-surgeon, granted leave of absence for 1 day, Oct. 16, 1907, under Paragraph 210, Service Regulations.

Deaths

George Frederick Shrady, M.D., died at his home in New York City, November 30, from pyemia consequent on cholelithiasis, after an illness of two weeks, aged 70. He received his preliminary education in the College of the City of New York, and in 1869 was given the honorary degree of A.M. by Yale College. He graduated from the College of Physicians and Surgeons in the City of New York in 1858, then served a term as interne in the New York Hospital and afterward settled in that city for practice. During the Civil War he was an acting assistant surgeon in the United States Army. Dr. Shrady's editorial work began in 1860, when he became editor of the *American Medical Times*, holding this position until 1864. Two years later he founded the New York *Medical Record* and remained its editor-in-chief for thirty-nine years. By reason of his ability and aggressiveness he brought that journal into the front rank of medical weeklies. He was the author of "Pine Ridge Papers," a series of satirical diatribes against charlatanism in medicine. His contributions to both popular and technical journals were frequent and valuable. For many years he was a member of the editorial staff of the *New York Herald*, devoting his attention chiefly to matters of medical or surgical interest. He was the attending physician of President Grant during his last illness and was also consultant in the case of the late Emperor Frederick of Germany. He was prominent in the Guiteau case, assisted in making the autopsy and made a report to the profession and the public touching its results. He was consulting surgeon to the St. Francis, Columbus, General Memorial, Health Department and Presbyterian hospitals, New York City. He was secretary of the New York Pathological Society for many years, and a member of the New York Academy of Medicine and the medical societies of the State and County of New York, and a fellow of the American Academy of Medicine.



GEORGE F. SHRADY, M.D., BORN 1837, DIED 1907.

William Laton Belcher, M.D. Long Island College Hospital, Brooklyn, N. Y., 1884; a member of the American Medical Association and Association of Military Surgeons of the United States; for twelve years pathologist to Seney Methodist and Christopher hospitals; physician to the Polhemus Medical Clinic; assistant physician to Long Island College Hospital, and lecturer on materia medica and assistant to the chair of clinical medicine in the college; died suddenly at his home in Brooklyn, November 20, from pneumonia, aged 44.

James W. Casey M.D. University of Buffalo (N. Y.) Medical Department, 1862; a member of the medical societies of the State of New York and County of Monroe; assistant surgeon of the One Hundred and Fifth New York Volunteer Infantry throughout the Civil War; for nearly fifty years a member of the staff of St. Mary's Hospital, Rochester, and president of the staff at the time of his death; visiting physician at St. Anne's Home for the Aged, and an honorary member of the Hospital Medical Society; died at his home in Rochester, November 18, aged 73.

Matthew W. Borland, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1872; Rush Medical College, Chicago, 1893; a veteran of the Civil War; organizer and first president of the Chicago Retail Druggists' Association; one of the organizers and for two years president of the Chicago College of Pharmacy; for many years secretary of the Illinois Pharmaceutical Association and editor of the *Pharmacist;* died at his home in Los Angeles, Cal., November 21, after a lingering illness, aged 73.

E. Marion Foster, M.D. Louisville (Ky.) Medical College, 1892; honor man of his class; a member of the American Medical Association and of the American Association of Genito-urinary Surgeons; a constant student, and a practitioner of great promise; died at his home in Portsmouth, Ohio, November

21, from septicemia, contracted while performing an operation, after an illness of five weeks, aged 38.

James C. Gatchell, M.D. Jefferson Medical College, Philadelphia, 1860; assistant surgeon of the Fifty-fifth Pennsylvania Volunteer Infantry during the Civil War; four times a member of the legislature from the South district of Lancaster County; died at his home in Lampeter, Pa., November 16, after a short illness, from heart disease, aged 72.

Frederick C. Hoopes, M.D. College of Physicians and Surgeons of Chicago, 1902; of Oklahoma City, Okla.; professor of otology, rhinology and laryngology in Epworth University College of Medicine, Oklahoma City; died in St. Anthony's Hospital in that city, November 21, after an operation necessitated by ptomaine poisoning, aged 30.

Frederick Rectanus, M.D. University of Louisville, Medical Department, 1861; surgeon in the Federal Army during the Civil War; formerly mayor of Aurora, Ind., and for six years a practitioner of Louisville; died suddenly at his home in Denver, Colo., November 19, from heart disease, aged 72.

Theodore Woodward Barton, M.D. University of Buffalo (N. Y.) Medical Department, 1862; a member of the Medical Society of the State of Pennsylvania and Erie County Medical Society; died at his home in Waterford, Pa., November 15, from pneumonia, after an illness of five days, aged 71.

Richard Dana Bloss, M.D. College of Physicians and Surgeons in the City of New York, 1853; major and surgeon of the Second New York Volunteer Infantry during the Civil War; died at his home in Troy, N. Y., November 17, from cerebral hemorrhage, after an illness of one week, aged 72.

Walter T. Haygood, M.D. Southern Medical College, Atlanta, Ga., 1889; of Farmington, Ga.; a member of the Medical Association of Georgia and Oconee County Medical Society; died at the Elkins-Cooper Sanitarium, Atlanta, November 15, after an operation for appendicitis, aged 45.

Charles J. Graser, M.D. Northwestern University Medical School, Chicago, 1904; of Springfield, Ill.; a member of the Illinois State and Sangamon County medical societies; died at St. John's Hospital, Springfield, November 19, from typhoid fever, after an illness of two weeks, aged 35.

William Charles Jacob Schmidt, M.D. University of Vermont, College of Medicine, Burlington, 1884; a member of the medical societies of the State of New York and County of Kings; died at his home in Brooklyn, November 18, after an illness of two years, aged 57.

Herman C. O. Steinke, M.D. Bellevue Hospital Medical College, New York City, 1882; of Brooklyn, N. Y.; a member of the American Medical Association; died November 21, from hemorrhage of the throat, following a long illness with malaria, aged 63.

Samuel Houston, M.D. Georgetown University School of Medicine, Washington, D. C., 1868; chief medical referee of the Bureau of Pensions, Washington, D. C.; died in Garfield Hospital, Washington, November 17, after a brief illness, aged 65.

J. T. Lynch, M.D. University of Louisville, Medical Department, 1893; a member of the State Medical Association of Texas and Hopkins County Medical Society; died at his home in Como, August 26, from fatty degeneration of the heart, aged 67.

Raymond Perry Eddy, M.D. University of Vermont, College of Medicine, Burlington, 1882; a member of the American Medical Association; died at his home in East Providence, R. I., November 16, from heart disease, after a short illness, aged 55.

Charles S. Harris, M.D. Vanderbilt University, Medical Department, Nashville, Tenn., 1902; of San Bernardino, Cal.; died at a hospital in San Francisco, November 17, as the result of injuries received in a bicycle accident six weeks before.

J. de Barth Shorb, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1895; a member of the American Medical Association; died at his home in Los Angeles, Cal., November 25, after an illness of six months, aged 37.

Alfred C. Whelen, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1874; a prominent practitioner, clubman and traveler of Philadelphia; died suddenly in Naples, Italy, November 18, from neurasthenia, aged 53.

Lucius W. Blakesley, M.D. Eclectic Medical Institute, Cincinnati, 1844; for forty-eight years a resident of Aurora, Ill.; died at his home in that place from carcinoma of the liver, October 29, after an illness of three months, aged 86.

James F. Graham, M.D. University of Arkansas, Medical Department, Little Rock, 1888; died at his home in Hot Springs, Ark., November 17, from heart disease, after an illness of several days, aged 55.

Carl Gerdes Danforth, M.D. Kentucky University, Medical Department, Louisville, 1903; a member of the American Medical Association; died at his home in Valentine, Texas, November 12, aged 26.

George W. Cutshaw, M.D. Fort Wayne (Ind.) College of Medicine, 1887; died at his home in Arcola, Ind., November 15, from cerebral hemorrhage, after an illness of several weeks, aged 64.

Herbert R. Ferrell, M.D. Eclectic Medical Institute, Cincinnati, 1889; of East Liverpool, Ohio; died at the home of his sister in Cleveland, November 20, after a prolonged illness.

Peter O. Wickert, M.D. College of Physicians and Surgeons, Baltimore, 1882; died at his home in South Bethlehem, Pa., November 18, after an illness of four months, aged 50.

Curtis Heffner, M.D. Jefferson Medical College, Philadelphia, 1897; of Topton, Pa.; died in Pottstown Hospital, November 20, a day after an operation for appendicitis, aged 36.

John Bunyan Masterson, M.D. University of Iowa College of Medicine, Iowa City, 1884; formerly of Albion, Iowa; died at the Finley Hospital, Dubuque, November 11, aged 48.

James A. Hoffmann, M.D. Louisville (Ky.) Medical College, 1890; died at his home in Shepherdsville, Ky., November 11, from abscess, aged 67.

J. Dallas Richardson (License, Tenn., 1889); died at his home in Medina, Tenn., recently, and was buried November 17.

Marriages

DWIGHT C. ORCUTT, M.D., to Miss Grace Leach, both of Chicago, December 3.

W. A. BALL, M.D., Wanette, Okla., to Miss Mertie Brown of Lexington, Okla., recently.

GEORGE SYLVESTER MYTINGER, M.D., to Miss Rachel Keiser, both of Cincinnati, November 7.

MATHEW W. W. REITZ, M.D., to Miss Onia B. Wetherwax, both of St. Louis, November 19.

GEORGE C. YEAGER, M.D., Philadelphia, to Miss Jessie K. White of Baltimore, November 20.

CHARLES RICKSHER, M.D., Hawthorne, Mass., to Miss Edith E. Smithson, at Baltimore, October 10.

FRED HARLEM KLAER, M.D., Philadelphia, to Miss Mary Wood Howland of Brooklyn, November 16.

JAMES M. KIRK, M.D., Pasadena, Cal., to Miss Anna McKay of La Salle, Ill., at Milwaukee, Wis., recently.

FRANCIS H. SMITH, M.D., of Lewisburg, W. Va., to Miss Elsie Boykin, at Richmond, Va., November 20.

WILLIAM H. LARRABEE, M.D., to Miss Audrey Mae Rupkey, both of New Palestine, Ind., at Irvington, Ind., November 14.

HERBERT T. CROUGH, M.D., Mohawk, N. Y., to Miss Elizabeth Irene Colcord of Ithaca, N. Y., at Mohawk, N. Y., November 14.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Days for Work and Nights for Study.

The physicians of Bellefontaine, Ohio, have taken action regarding evening office hours, thus limiting, in all except emergency cases, the number of hours of a physician's working day. An agreement, signed by practically every physician in the town, has been published in the local papers, whereby the physicians agree to close their offices at 6 o'clock each evening except Saturday. They estimate that at least 95 per cent. of the office work done in the evening could just as well be done during the day. By closing their active work, so far as possible, at 6 p. m., they hope to have the evening for study and reading, thus increasing their ability and the value of their services to their patients. Patients are requested not to make

demands on the physicians during the evening hours, except in cases of emergency.

There is no reason why the bulk of a physician's work should not be done during the same hours that are devoted to other lines of work. While the true physician always stands ready to aid at any time, regardless of his own convenience or comfort, yet if he can feel that, with an occasional exception, he can devote his evenings to reading and study, he will gain much incentive for that self-improvement to which every physician should aspire. It is safe to say that in a very short time the citizens of Bellefontaine will be as much pleased with the innovation as the physicians themselves.

Division of Fees Between Family Physician and Specialist.

J. Noir has an article on this subject in the *Progrès Méd.* for October 5, written in reply to an inquiry in regard to the "ethics of dichotomy." The latter word, it seems, used for some time in the United States, has found its way into the French dictionaries. Besides its botanical definition, "division of an organ into two equal parts," a second definition states that it represents "division of the fees between a physician called in consultation or a surgeon and the practitioner who procured the client."

Noir reviews the history of the question, and cites a German exchange which states that France is the country in which dichotomy most flourishes. In reply to this he asserts that it is in France that the general practitioners offer the best examples of dignity, of tact and of disinterestedness. A self-respecting French physician never publishes in the daily papers the opening of his office or his return from his vacation; he does not call attention to his residence by an enormous sign; he does not dispense to his patients for pay the medicine he prescribes, and if he discovers a new medicine or a new therapeutic procedure, he does not keep it secret and exploit it commercially, but hastens to publish it for the welfare of suffering humanity.

In regard to dichotomy, Noir thinks that the solution of the problem is for the specialist to restrict his intervention to matters requiring special technic. Sooner or later, therefore, the patient will return to the attending physician, and in order to have him continue the necessary treatment he should be kept informed in regard to the course of the case. The specialist should insist on consultations with the attending physician at regular intervals, so that he can continue the treatment intelligently. This is an entirely proper, honest and useful way to interest the practitioner in the specialist's intervention. Noir thinks this plan should be carried out in insane asylums, in hydrotherapeutic institutions, convalescent homes and the like. The physicians in charge should insist on regular consultations with the family physician. This would keep the families informed in regard to the progress of the case and would do away with the common dread of insane asylums. By thus interesting the practitioner in the specialist's intervention, a just proportion between their charges would result, all open and above board, and in the direct interests of the patient. It would also counteract the growing tendency for patients to apply directly to the specialist, from which harm frequently results, as the work of the specialist is liable to be of no permanent benefit unless the cause of the trouble is removed by general treatment.

Illinois Adopts a New Cocain Law.

The Illinois legislature has adopted a new law for the regulation of the sale of cocain. It provides that it shall be unlawful for any druggist or other person to retail, sell or give away cocain, alpha or beta eucain, or any compound or derivative of any of them, or any preparation or compound containing any of them, except on the written prescription of a duly registered physician, which prescription must contain the name and address of the person for whom it is prescribed. The druggist filling the prescription is instructed to place the date on it and to retain the original on file, to fill it but once and to give no copy to any person. The wholesaling of these substances is not interfered with, provided the wholesale dealer affixes a label to the package stating the name and quantity of the sale and marked "poison," with the name and place of business of the seller. Wholesale dealers are required to keep a record of all sales, showing the date, quantity and form and the name and address of the purchaser.

It is also unlawful for any registered physician or other person to prescribe, sell or offer for sale any cocain or derivative or substance containing cocain to any persons addicted to the habitual use of the drug.

Violation of the provisions of the act is constituted a misdemeanor punishable by fine or imprisonment, or both. If the offender is a registered physician, dentist or pharmacist, conviction for such an offense constitutes a revocation of his license.

Illinois Practice Law Amended.

The following addition to the medical practice act of Illinois was passed by the House, October 22, and was adopted by the Senate, November 1:

Sec. 2b.—The State Board of Health shall be empowered to establish a standard of preliminary education deemed requisite to admission to a medical college in "good standing," and to require satisfactory proof of the enforcement of this standard by medical colleges: *Provided*, that the board shall not recognize examinations of applicants for admission to medical colleges, that have been conducted by the faculty or officers of a medical college: And provided, further, that the diploma of an approved high school or equivalent school having a course of studies requiring an attendance through four school years, or a certificate of having passed a satisfactory examination before the state superintendent of public instruction, or like state officer, in the studies embraced in the curriculum of such approved high school shall be considered satisfactory evidence of preliminary education: And provided still further, that the Illinois State Superintendent of Public Instruction shall be empowered to exact a fee of five dollars from each applicant for such examination. The board shall also be empowered to determine the standing of literary or scientific colleges, high schools, seminaries, normal schools, preparatory schools, and the like, and the board may, in its discretion, accept as the equivalent of one or more of the sessions or terms prescribed in its requirements governing medical colleges in "good standing," attendance in a literary or scientific college in "good standing" as evidenced by a degree from said institution, providing that the standards of said literary or scientific college are fully equal to those of the State University of Illinois.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES.

DR. JOHN H. BLACKBURN, Director.
BOWLING GREEN KENTUCKY.

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Month.

SECOND WEEKLY MEETING.

Acute Articular Rheumatism.

Pathology: Changes in synovial membranes, periarticular structures, cartilages, effusion, tendon sheaths. Changes in endocardium, pericardium, myocardium. Blood changes.

Clinical History: Prodromata, fever, angina, etc. Invasion, fever, chills, synovitis, pain, swelling, perspiration. Duration, defervescence.

Complications: Hyperpyrexia—Time of onset, cerebral symptoms, prostration.

Cardiac Affections—Endocarditis, frequency, time of onset, termination, diagnosis. Pericarditis, occurrence, forms, symptoms, physical signs. Myocarditis, association with other lesions, dilatation.

Pulmonary Affections—Pneumonia, pleurisy, accompanying cardiac lesions.

Nervous Complications—Delirium, coma, convulsions, chorea, meningitis.

Skin Lesions—Sudamina, erythema urticaria, purpura. Subcutaneous nodules, distribution, pathology.

Treatment.

Prophylaxis: Exposure to cold, occupation, local predisposition, tonsillitis.

Internal Medication—Salicylic acid, its compounds. Physiologic action. Therapeutic action. Untoward effects. Antipyrin and acetanilid. Alkaline treatment.

Local Applications—Counter-irritants. Cold and heat. External applications.

INSIDE HISTORY OF THE KEELEY CURE.

STORY OF ITS ORIGIN, SHOWING THE FRAUDULENT METHODS EMPLOYED IN BUILDING UP THE BUSINESS.

[For a synopsis of the whole case, see Medicolegal Department, this issue, page 1951. The illuminating testimony of Mr. F. B. Hargraves, one of the founders of the "Keeley Chlorid of Gold Cure," was commenced last week, page 1861, and is here concluded as follows:]

Q. 76. That was called the gold cure, too, wasn't it?

A. Oh, yes; everything was the gold cure.

Q. 77. Well, now, when did you go to work on the tobacco remedy?

A. Why, we wanted to make business, and so we got up a tobacco cure.

Q. 78. Was there any gold at all in that treatment?

A. Oh, no; not to my knowledge.

Q. 79. When did they take up the neurasthenia cure?

A. It was all along within two or three months, that we decided to put the cure for neurasthenia on the market. I wrote the literature for that. I also designed the name "Neurotine." I coined the name.

Q. 80. Was there any gold of any kind in that?

A. No, sir.

Q. 81. Who manufactured the medicine?

A. Oughton did the actual manufacturing.

Q. 82. Who superintended the manufacture of the medicine?

A. Keeley.

Q. 83. Did you have anything to do with the manufacture of the remedy?

A. Not specifically.

Q. 84. You knew the formulas of all the remedies?

A. Oh, yes.

Q. 85. Was there any alcohol in the tonic manufactured?

A. Oh, yes.

Q. 86. What per cent.?

A. I decline to answer that.

Q. 87. I believe you stated that you wrote the literature for all of these cures.

A. Yes, sir.

Q. 88. You got up articles on opiumism, the tobacco habit, etc.?

A. I did; I got up all the literature.

Q. 89. Whose name did you sign to the article?

A. Leslie E. Keeley, M.D.

Q. 90. The articles were gotten up in pamphlet form and sent out, were they?

A. Yes, sir.

Q. 91. Just state where the office and manufacturing departments, etc., were located?

A. They were located in West Street, in the old printing office.

Q. 92. Describe the building and where your office was as well as you can and the inside of the building?

A. It was a double building, and we cut a doorway in between the two buildings. The first building on the south in the front part was a general office, where Major Judd had his desk, and I had my desk, and later on we had stenographers, and in the back part of the building was the private office, which Dr. Keeley had. The north building was used as a laboratory and shipping room.

Q. 93. L. H. Fuller's building was north of that, was it not?

A. Yes, sir.

Q. 94. Charles Reed worked there, didn't he?

A. Oh, yes; Charlie Reed worked there—between us and Hi Cornell's livery barn.

Q. 95. Who first introduced to the world the fact that inebriety, morphinsm, etc., were diseases?

A. I don't know. It was a long time before our time.

Q. 96. Then, as I understand it, the discovery of these cures was largely accidental?

A. Oh, yes.

Q. 97. Isn't it a fact that Dr. Keeley advertised that he had been studying all his life, and while he was a surgeon in the Army and since that time, and had spent years in research in order to accomplish and perfect his system of cures?

A. Oh, yes, I believe he so stated, but as a matter of fact, it was purely a myth. I do not believe Keeley had given any time to these things up to the time I spoke to him at first about it.

Q. 98. Did he spend eleven years in perfecting these treatments?

A. That's nonsense.

Q. 99. Did you ever have any conversations with Dr. Leslie E. Keeley concerning drunkenness, so as to sound his knowledge of the subject? And, if so, what did he know about the subject and the treatment of drunkenness?

A. I don't think he knew anything more about the treatment of drunkenness than I did. That was at the time of the first beginning of the business.

Q. 100. Did you send out testimonials concerning these cures, etc., alleged to be bona fide testimonials?

A. Oh, no; at first we just manufactured them. After a while, we got some genuine testimonials, but sometimes when a man would get drunk again, we would have to drop the testimonial out. Oh, yes, later on we got good testimonials.

Q. 101. What do you mean by good testimonials—genuine testimonials?

A. Yes, sir.

Q. 102. Who wrote the literature pertaining to drunkenness?

A. I did.

Q. 103. How long was it after you became connected with the establishment until the public took to patronizing you?

A. After about six or eight months.

Q. 104. Were these Keeley remedies ever analyzed, or any part of them, and, if so, for what purposes?

A. Why, I suppose they were analyzed by different people to find out what their ingredients were.

Q. 105. Did the Keeley company ever have them analyzed?

A. No; we never had them analyzed.

Q. 106. Did anyone to your knowledge ever have the remedies analyzed, and, if so, what for?

A. I know of two cases where it was analyzed.

Q. 107. What were tney?

A. Well, one was Dr. Kane, who sent it on to the Rush Medical College. And Keeley told me that Kane had Professor Haines analyze it for him.

Q. 108. What was the purpose of the analysis?

A. To find out what we were using.

Q. 109. Was any gold found in the tonic analyzed at that time?

A. I don't know.

Q. 110. Did they sell any territory while you were connected with the partnership?

A. Yes; it was sold to different people, the same as Willoughby bought it.

Q. 111. Now, was it represented to these people who were to be managers in different states that there was any gold in the preparation?

A. Oh, yes; that was represented in the literature.

Q. 112. Now, as a matter of fact, did the company keep any chlorid of gold—double chlorid of gold sodium—there on hand, and for what?

A. Yes; we had three or four drams there in the safe for exhibition purposes.

Q. 113. What do you mean by exhibition purposes?

A. Oh; to show to people coming in or visitors who came to look over the laboratory. Sometimes they would be shown these samples of gold and sodium as that which we made the gold from.

Q. 114. Did you show the managers that?

A. Oh, yes; we showed it to any and everybody.

Q. 115. Who would do that?

A. Keeley or anyone else that happened to be showing them around.

Q. 116. Well, how would the partnership represent this chlorid of gold sodium was manufactured?

A. Why, from that material; that was the basis of the remedy. You see, we were keeping up the fiction of the gold all the time. Now, when a prospective manager came we always had three or four vials there ready for that purpose.

Q. 117. I will ask you from what the chlorid of gold and sodium was manufactured. Was it manufactured from United States gold coin?

A. Oh, no; it was the common chlorid of gold and sodium such as photographers use.

Q. 118. Did you just keep it there to show the people?

A. Oh, yes.

Q. 119. Didn't use it for any other purposes?

A. Oh, no.

Q. 120. Was there ever any controversy through the press as to whether or not these remedies contained gold?

A. Constantly. We were assailed by people claiming that there was no gold in the remedy.

Q. 121. Did you ever have a test case?

A. Yes.

Q. 122. What was that?

A. Why, that was this way: Keeley thought we had better get an authoritative statement that the remedy contained gold, so he suggested to a man called S. T. K. Prime, who lived about a mile from Dwight, who, by the way, had come in and talked about the remedy at different times, and claimed that people generally did not believe there was any gold in them—so Keeley suggested to him that he take two bottles and have it analyzed by Professor Marriner, the celebrated analytical chemist in Chicago.

Q. 123. Well, how was that arranged now?

A. Well, it was necessary to have some gold in the bottles for that purpose, so Oughton fixed up two bottles with gold in them, and put the two bottles in a row that was half full of bottles and they were the last two bottles in that row, and when we had everything ready we took Prime into the laboratory, and told him to take any two bottles he chose for the analysis, and very naturally he selected the first two bottles that came to his hand. They were the nearest ones to him. So Prime took the bottles to Professor Marriner, who analyzed their contents, and gave Mr. Prime a certificate that he had found gold in the remedy, and Prime turned over that certificate to us, together with a certificate from himself that he had taken the two bottles in question from the stock prepared for shipment, in the laboratory, and, as shown by Professor Marriner's certificate, their contents contained gold as claimed. And these certificates were published right along.

Q. 124. But as a matter of fact, the two bottles specially prepared for the purpose were the only ones there that contained gold?

A. Oh, yes; it was a fixed-up affair.

Taking of these depositions continued till 2 p. m. 3-10, 1904.

Business resumed at 2:05 p. m., same date and place.

Q. 125. Now, Mr. Hargraves, with reference to the first patients; who treated them, and how? Did Dr. Keeley treat them?

A. What patients?

Q. 126. The first patients treated by the copartnership?

A. The first patients were treated by correspondence, which I conducted myself.

Q. 127. How was the correspondence conducted?

A. Why, we had printed blanks, and there were questions pertaining to the patient's physical condition, how long he had been an addict, etc. He was also asked how he felt, if he took his medicine regularly, how he slept, and if he had an appetite for liquor, etc., so as to get an idea of how he was getting along and give his case proper attention.

Q. 128. Was it represented to them then that they were being treated under the personal supervision of Dr. Leslie E. Keeley?

A. Oh, yes; that was the only name used, and was signed to all communications and literature. I used his name right along.

Q. 129. Now, I will ask you to outline the duties of Mr. Oughton at that time. Was he consulted concerning the business?

A. Oh, no; he wasn't consulted about anything.

Q. 130. Did you ever make any bogus shipments?

A. What do you mean by bogus shipments?

Q. 131. Well, shipments made for the purpose of creating a false impression—grandstand play.

A. Well, now I think I know what you mean. It don't amount to much anyway. Sometimes when a man would come down there to get a general agency or some other man would come that we wanted to make an impresison on, Keeley would have a whole lot of boxes fixed up apparently for shipment, and while the visitor was in the main office, Oughton would come out and have eight or ten boxes checked up quick, and rush to the depot, so as to get them off in time, but after the man was gone the boxes were brought back. The visitor during the performance would say: "You seem to be making lots of shipments." And Keeley would reply: "Oh, yes; that's just one of our ordinary shipments." But that was nothing.

Q. 132. It was just one of the ordinary tricks of the busines, eh?

A. Oh, yes.

Q. 133. After you left the company, was the company formed into a corporation?

A. So I understand.

Q. 134. What was the name of the corporation?

A. The Leslie E. Keeley Company. The name of the company wasn't changed. We had been using that name two or three years, but it wasn't incorporated at all until after I left.

Q. 135. How long did it take to cure whisky patients then?

A. Three weeks, when we had them under treatment. When we sold a pair of medicine, it was calculated to last two weeks or sixteen days. In the beginning of the treatment, we claimed one pair would cure an ordinary case, but afterward advised patients to buy two pair. When we took patients to Dwight for treatment, we kept them three weeks.

Q. 136. Do you remember how they had to take their tonic?

A. Every two hours when I was there.

Q. 137. Did they take it out of the bottle?

A. We used to give them the bottle and let them take it along.

Q. 138. What was the dose prescribed?

A. A teaspoonful in a quarter of a glassful of water, I think, or a third of a glassful ————; that's immaterial anyway.

Q. 139. Were there any complaints made as to the injurious effects of the remedies while you were there?

A. No, sir; not that I know of.

Q. 140. I believe you said you were state temperance lecturer then?

A. Yes, sir; I was.

Q. 141. Well, did you advertise the Keeley treatment in your lectures?

A. No; I abandoned the lecture platform to go into the business. I wrote a lot of letters for the papers and got circulars out, and my title of vice-president of the Illinois Temperance League was signed to these letters and circulars. That was the first way we got business.

Q. 142. Did Dr. Keeley take the honor for all that?

A. He insisted on his name alone being known.

Q. 143. Why was that?

A. Well, as I told you this morning, he claimed his position as surgeon of the Chicago & Alton Railroad, the fact that he was a practicing physician, and that he was an ex-surgeon of the United States Army would all tend to give the business tone and prestige, and so he insisted on having his name alone used. It may have been a far-sighted policy, but if I had known as much then as I do now, perhaps I might have brought my name in too.

Q. 144. State whether or not Dr. Keeley was a man of any personality or magnetism.

A. Yes, he was a man of strong personality. He dominated everybody, and ruled everybody, and made them do as he wanted them to do, and if they would not do it, he would make them do it, or have nothing to do with them at all. That was Keeley's character.

Q. 145. Who designed the bottles which the Keeley remedies were sold from?

A. I did.

Q. 146. You got up the labels—double chlorid of gold—designs, etc.?

A. I got up the labels, shield, bottle and monogram. I went up to Joliet to see Hutchins, the patent attorney there, with a view of getting protection for our remedies after we got started, and discussed the question with him for the whole of one morning, I presume—quite a long time—he suggested a number of things, but I objected to each one because they were not good. For example, he said, "Why not patent the formula?" I told him anybody could get a copy for 25 cents, and by changing one ingredient, could manufacture our remedies with impunity. Finally he gave it up. Then I said, "Why not have a specially designed bottle different from anything else in the market." And he said, "What did you come to me for? You know more about this than I do. That is what you want." So I went back to Dwight, and went to work to design a botle, and I made one, made it out of cardboard, and took it to old man French, who had a tin shop right next to the mill, and asked French to make me two of them in tin. The bottle was so peculiar in shape, French said he couldn't do it. But I finally persuaded him to do it, and he made me two bottles of tin. I sent one to Hutchins in Joliet, and the other one to Whital-Tatum & Co., bottle manufacturers, Philadelphia, Pa., and gave them an order for some bottles. After a time I got a letter from Hutchins enclosing a letter from the patent office in Washington, stating the bottle could not be patented, as it would be an infringement on existing patents. So then I went to work to draw up specifications myself, setting forth points Hutchins had omitted, modifying such parts as he had misrepresented and otherwise revising the whole matter, and sent the specifications back to Hutchins, with instructions that Hutchins renew the application, which he did, and obtained a patent for the bottle.

Q. 147. These are the same bottles used by the Leslie E. Keeley Company now, are they not?

A. Oh, yes.

Q. 148. They are labeled the same, are they not?
A. I haven't seen the bottles lately.
Q. 149. I hand you here deposition of John W———, witness for complainant in this cause, and attached thereto are Exhibits Nos. 2, 3, 4, 5, 6, 7, 8, 9, and ask you if that is the label which you got up?
A. That is not (referring to Exhibit No. 2). Let me say right here that is the shield I got up, on the label, but here is an addition to it (institute tonic form). But I can not swear to this label as it has been twenty years ago.
Q. 150. Now is this different (Exhibits 3 and 4)?
A. I can not swear whether this reading is the same or not. The shield in Nos. 5 and 6 is the same. In No. 7 it is different, and also in Nos. 8 and 9.
Q. 151. Do you mean there is a difference in the shield?
A. There are additions to it.
Q. 152. Were the letters gotten up in gold at that time?
A. Oh, yes; in imitation of gold.
Q. 153. Why was that done?
A. It was done with the intention of being in harmony with the gold idea.
Q. 154. Well, when patients would come to Dwight to be treated, did you ever try to sell them any gold bricks or mining stocks?
A. No; we had no mining stocks to sell that I know of.
Q. 155. Did Dr. Keeley ever have any mining stocks to sell?
A. Oh, yes; whenever he had a chance to make a "nimble sixpence" he did so. But that had nothing to do with that business.
Q. 156. I suppose that was just a side line.
A. Oh, yes; you may so term it.
Q. 157. Did Dr. Keeley commence making speeches around over the country while you were connected with the company?
A. Well, I guess not.
Q. 158. Didn't commence making his speech-making until after you had left, did he?
A. Oh, no; he had never done any work of that kind at that time.
Q. 159. Who kept the books of the establishment?
A. Major Judd, after he came in. I kept them before that time.
Q. 160. Were there any invoices of double chlorid of gold or chlorid of sodium while you were there, on the books?
A. Well, nothing more than I have stated, so far as I know.

Cross-examination by T. E. Barry, Esq., of counsel for complainant.

Complainant's counsel excepts to the foregoing deposition or depositions and each and every question and answer contained therein as being irrelevant, incompetent and immaterial, and having no bearing, direct or indirect, on any issue or issues involved in this cause, and at the proper time will move that the same in whole or in part be stricken from the records, not waiving his aforesaid exceptions or any part thereof, but relying on the same, complainant proceeds to examine the witness as follows:

Q. 1. When did you come to Memphis, Mr. Hargraves?
A. This morning, March 10.
Q. 2. Had you been in correspondence with Mr. Charles B. James before coming here?
A. No, sir; I had not.
Q. 3. How long, Mr. Hargraves, have you been knowing Mr. Charles B. James?
A. Well, I think I have known him for about a month. It was within the last few weeks that I met him.
Q. 4. Where did you meet him?
A. In Chicago.
Q. 5. At what place in Chicago?
A. The Palmer House.
Q. 7. Who introduced you to Mr. Charles B. James, Mr. Hargraves?
A. Mr. Ketchum.
Q. 8. Now, did you have more than one interview with him at that time?
A. Yes, I saw him two or three times.
Q. 9. Did you see him each time at the Palmer House
A. Yes, sir; each time at the Palmer House.
Q. 10. Mr. James informed you of the nature of the controversy between the Leslie E. Keeley Company and himself, did he not?
A. He tried to tell me about it, but it was hard for me to get it through my head. It was so complicated. You know, I am not a lawyer, Mr. Barry.
Q. 11. Did Mr. James arrange with you in Chicago that you were to come to Memphis?
A. No, sir.
Q. 12. Who made that arrangement?
A. Mr. Ketchum made the arrangement subsequently to Mr. James' leaving.
Q. 13. What arrangement was made with you in relation to coming to Memphis by Mr. Ketchum?
A. Why, he asked me to come here and give my testimony in relation to the Keeley Cure remedies.
Q. 14. Was any arrangement made in regard to your compensation?
A. I was to have my expenses paid; yes, sir.
Q. 15. Is that all; just your expenses?
A. Well, no; Mr. Ketchum said it would not cost me anything if I came here. I told him I couldn't afford to come here for nothing.
Q. 16. You are not a physician, are you?
A. No, sir.
Q. 17. Did I understand you correctly to state that you made the first suggestions to Dr. Leslie E. Keeley in regard to going into the cure business.
A. Yes, sir.
Q. 18. Did you suggest to him the remedy to be used?
A. It was mutual and was suggested by both at the time in a general conversation. I think we got it from the same source.
Q. 19. Did you aid him or assist in his experiments?
A. Oh, yes.
Q. 20. The remedy wasn't the gold remedy that you both simultaneously discovered?
A. No, sir.
Q. 21. Had you ever had any connection with any other physiological or medical establishment prior to that time?
A. None whatever.
Q. 22. You understand most things pretty well, however, do you not, Mr. Hargraves?
A. I understand some things pretty well, not most things.
Q. 23. You understand all about the cure as well as Dr. Keeley, did you not?
A. I do not think Keeley knew anything about any of the cures at that time. This in my private opinion; we were both very green at that time.
Q. 24. When you went to see the patent attorney in Joliet, you knew more about it and the patent laws than the patent attorney himself, did you not.
A. No, sir; I did not say so.
Q. 25. Well, he drew the specifications and the patent was refused; whereas, afterward you drew or revised them and the patent was granted; is that not so?
A. That's true.
Q. 26. Now while we are on that bottle, it was never claimed that the bottle had any special usefulness; that is, the shape didn't add to its utility, did it?
A. No, sir; not at all.
Q. 27. It was merely for the sake of getting something different from anything else on the market, was it not?
A. Yes, sir; but the flat combination bottle I designed could be put together in pairs.
Q. 28. Well, if both sides had been flat it would have been just the same, would it not?
A. Oh, yes.
Q. 29. What was the name of the organization for which you were lecturing?
A. The Illinois State Temperance League.
Q. 30. Did you have a salary?
A. No, sir.
Q. 31. How were you compensated for your services?
A. By the different organizations employing me in the different towns; sometimes by the Red Ribbon, sometimes by the Blue Ribon and sometimes by other organizations under whose auspices I lectured.
Q. 32. Where was your home at that time; in Dwight?
A. Yes, sir.
Q. 33. What has been your occupation previous to that of temperance lecturer?
A. I had been practicing law.
Q. 34. Had you been a clergyman?
A. Yes, sir.
Q. 35. Had you been an ordained clergyman?
A. Yes, sir.
Q. 36. What denomination were you a clergyman of?
A. Of the Presbyterian denomination.
Q. 37. Did you have a charge in Dwight?
A. Yes, sir.
Q. 38. Have you been connected with any other denomination as a preacher?
A. No, sir; not in this country.

Q. 39. Well, were you ever a preacher in any other country?

A. Yes, sir; a preacher in the Wesleyan Methodist Church in England.

Q. 39. I understood you to say that you put in $100 when you went into the cure business with Leslie E. Keeley, M.D.?

A. Yes, sir.

Q. 40. Do you mean that you put in the whole of the $100?

A. No, sir; I put in only a part of the money.

Q. 41. Whatever you put in at that time, that was all you ever put into the business, was it not?

A. That is all except the $350 paid to Judd.

Q. 42. Did this $350 you paid to Judd come out of the business?

A. No, I got it from England; it was my own private money.

Q. 43. I understood Mr. Kelly to ask you how long you had been connected with the firm of Leslie E. Keeley, M.D., or Leslie E. Keeley Company. How long was it?

A. About six years.

Q. 44. Was there any partnership agreement at any time?

A. Yes, at one time there was.

Q. 45. At what time was that, and what was the nature of it?

A. I could not tell you the exact time, Mr. Barry, but it was an agreement when we decided on the different proportions or interest of the business each one should have, when Keeley, Jud, Halpin and myself formed an agreement. It was then we had a copartnership agreement. It was along about that time and we had it in writing.

Q. 46. Did you have a copy of that agreement?

A. No.

Q. 47. Who did have it?

A. I don't know; there was only one copy made, and I suppose that is in the files of the Keeley Company at Dwight, Ill., where it should be. I don't think I have seen it since that time.

Q. 48. Did you write that copartnership agreement?

A. Yes, sir; I did.

Q. 49. When you retired from the firm, what was done with your interest? What disposition did you make of your interest in the firm, your share, your two-tenths interest?

A. I didn't do anything with it as I know of.

Q. 50. Did you sell it to anybody?

A. I do not remember whether it was sold to anybody or not; I was forced out of the concern, and went out in a hurry.

Q. 51. Were you paid anything at the time you went out?

A. Yes.

Q. 52. How much were you paid?

A. I think about $1,500.

Q. 53. At the time or very soon after the time that the business began the name of the remedy was "Double Chlorid of Gold," was it not?

A. Yes; in connection with some other word, I think; I have forgotten. The first word used was "disintoxicant" in connection with "Double Chlorid of Gold," I think.

Q. 54. Now was the name "disintoxicant" used very long?

A. Oh, no.

Q. 55. After that time by what name was the remedy known?

A. By the name of "Double Chlorid of Gold."

Q. 56. Now up to the time you left and all the time you were there the name "Double Chlorid of Gold" was used, was it not?

A. Yes, sir.

Q. 57. You know then that at the time "Double Chlorid of Gold" was not a modern invention in the Keeley work?

A. What do you mean by modern invention?

Q. 58. Well, it wasn't an afterthought, was it?

A. I don't exactly catch your meaning, Mr. Barry. Do you mean that it was not recently created?

Q. 59. Yes?

A. Oh, no; it had been used as far back as 1880 any way.

Q. 60. Do you remember when Dr. Keeley severed his connection with the Chicago & Alton Railroad Company?

A. I do not.

Q. 61. Did he continue to be surgeon for the Chicago & Alton Railroad Company up to the time you left there?

A. Yes, sir; he occupied that position when I left there.

Q. 62. Now, in regard to these literary efforts of yours, would they not be discussed with Dr. Keeley?

A. Oh, yes; usually.

Q. 63. Would they not be largely and generally discussed by you both sometimes?

A. He sometimes suggested the change of a word or sentence, and occasionally it would be changed up in some other way.

Q. 64. Wasn't Dr. Keeley always the head of the business?

A. Oh, yes; he was the head of the business, but he always posed. He would say to me: "I am the big spider in the back office; always throw a little mystery around me; keep me in the background;" that was his style.

Q. 65. Well, you acquiesced in that, did you not?

A. Sure; I had to.

Q. 66. Well, up to the time that Major Judd came in, your interest was just the same as Dr. Keeley's, was it not?

A. Yes; he always said so.

Q. 67. Why did you have to submit to his arbitrary methods if you were an equal partner with him?

A. Well, just as I explained a little while ago; Keeley dominated everybody and insisted on having his full sway and if you wanted to live in peace with him you had to do as he said, and I was a poor man and had to depend on my brains and work for a living, and simply had to accept conditions and do the best I could under the circumstances.

Q. 68. How long had you known Dr. Leslie E. Keeley before forming this copartnership? How many years?

A. I should think ten or twelve years, I judge so. Let me see, I may be mistaken about that; I should say about seven years.

Q. 69. Well, you knew pretty well what his temperament was and all that before forming the copartnership, did you not?

A. Oh, yes.

Q. 70. You and Dr. Keeley were always great friends, were you not?

A. Yes; he called me by my Christian name and we were friends, great friends.

(Mr. T. E. Barry says as follows): "I want to exhibit the copartnership agreement to you and see if you recognize it. I would like to have you look at this document which I hand you and tell me whose handwriting it is and by whom it is signed, please."

A. That is my writing without a question.

Q. 72. Was that document signed by you?

A. Yes, sir; signed by me; that's my writing; I wrote a better hand in those days than I do now.

By Mr. Barry: "Yes, I suppose we all did perhaps, but we are getting old now."

Q. 73. Now I will ask you, Mr. Hargraves, if you will attach this copy of the copartnership agreement to your deposition and mark it Exhibit No. 1?

A. Yes, sir; I will.

Q. 74. I will now hand you a paper which is dated Dwight, Ill., March, 20, 1886, purporting to be signed by you, and ask whether or not it is your signature and whether or not it is the original agreement which was made at that time?

A. Yes, that's my signature, I believe; I have no recollection of having signed it, however, at all.

Q. 75. I will now ask if you will attach this copy of that agreement to your deposition and mark it Exhibit No. 2?

Q. 76. I will now hand you papers purporting to be signed by you and dated Dwight, Ill., Jan. 7, 1887, and ask you whether or not that is your signature affixed thereto; that is, the outside one?

A. Yes, that is my signature, I believe.

Q. 77. Now, I will ask you to attach this copy to your deposition and mark it Exhibit No. 3.

A. I will.

Q. 78. I now hand you a paper dated the 26th day of September, 1887, purporting to be signed by you and ask you to state whether or not that is your signature affixed thereto?

A. Yes, that is my signature; I believe it is. You will observe that the H is made in a different way in this case, but that is my signature all right.

Q. 79. I will ask you to attach this copy to your deposition and mark the same Exhibit No. 4?

A. I will.

Re-examination by Mr. Kelly:

Q. 1. Mr. Hargraves in reply to Mr. Barry's question, you said, as I understand it, you knew from what source the idea of the liquor treatment was gotten by Dr. Keeley, and that you both hit on it at the same time, that the discovery was mutual and simultaneous.

A. From what source I got it; I do not quite understand the question.

Q. 2. Did you say you and Keeley got the idea from the same source?

A. Why, I got it from a newspaper and I think he got it from the same paper; it was one of those floating items that appeared in the papers and I saw it and called Keeley's attention to it and he said he saw it, too.

Q. 3. What paper did you see it in?
A. Mercy, I don't know.
Q. 4. What drug did you agree on?
A. I decline to answer that question, Mr. Kelly.
Q. 5. You know what drug it was, do you not?
A. Certainly.
Q. 6. Was it chlorid of gold or double chlorid of gold and sodium?
A. I decline to answer.
Q. 7. Why do you decline to state the contents of the medicine, Mr. Hargraves?
A. Well, it is none of your business, to be frank about it; the formula is a valuable property.
Q. 8. Well, is not that formula you speak of, the formula of the tonic, and not that of the hypodermic?
A. I am speaking of the formula of the tonic; that of the hypodermic has all been changed since I left.
Q. 9. How long after you left was it before they organized a corporation?
A. I don't know; it might have been six months, or it might have been longer.
Q. 10. Mr. Hargraves, I notice here this transfer you made to the Leslie E. Keeley Co., dated March 20, 1886, and made Exhibit No. 2 to your deposition, and will ask you what led up to and caused you to make that transfer?
A. Well, I had a row with them one day. Judd had done something I didn't think ought to be done and I criticised him for it severely. Well, after dinner, when Keeley got back from his dinner, Judd went in and had a talk with Keeley and then Keeley and Judd both jumped on me and abused me shamefully, and were going to lick me, and as a matter of fact I got my back up against the wall and prepared to defend myself; I thought we were going to get into a wrestle anyway. They abused me for a long time and finally they said to me that I had to get out, and that they were going to force me out of the business. I went out of Keeley's office and went home and shortly afterward I got a letter from Keeley, delivered by Oughton, notifying me not to appear at the office again or attempt to take any part in the business; that they would settle up my affairs and pay me what was coming to me. I wanted to be paid for my interest in the business; I thought I was entitled to my share of the good will in the Keeley business, but they would not have it that way, and it finally resulted in my taking what they proposed to give me, and get out. I finally took it and got out.
Q. 11. Do you remember transferring any real estate to the Leslie E. Keeley Co.?
A. No, I do not remember it; I can not remember all those things.
Q. 12. I will ask you if the Leslie E. Keeley Co. did not deny in the Chicago papers that you had any interest in the Keeley remedies at any time?
Objected to by Mr. Barry, solicitor for complainant, on the ground that the witness should not be allowed to testify as to contents of any paper. The paper itself being the best evidence.
A. I do not remember the Leslie E. Keeley Co. ever denying in any Chicago paper that I had any interest in the Keeley remedies. The only remembrance I have is that Judd wrote to the papers and said I was only a working partner. There were all kinds of reports floating through the press and I do not know who was responsible for them. I do not think they ever published such a statement as you state as that document (referring to the agreement) is *prima facie* evidence that I was a partner.
Q. 13. Mr. Hargraves, was your connection with the business severed because you divulged any information concerning the secrets of the manufacture of the remedies?
A. No, no, no.
Q. 14. You have been true in this respect?
A. Oh, yes, certainly.
Q. 15. From the time the business was first started to the present?
A. Oh, yes, certainly.
Q. 16. Was there any dissolution notice of this copartnership?
A. Not that I know of. I could not swear to it; I do not remember. I was pretty mad at that time and do not remember whether there was or not.
Re-cross-examination, by Mr. Barry:
Q. 1. Have you been engaged in the cure business since you left the Leslie E. Keeley Co.?
A. Yes, sir.
Q. 2. What was it called?
A. Dipsocure, a part of the time and later it was called Hargraves' Cure.
Q. 3. Where were you located in the cure business?
A. At Chicago.
Q. 4. Do you have an institute?
A. Yes, sir.
Q. 5. When was that?
A. It was along some time in the 80's; I am not positive when.
Q. 6. How long did you continue in that business?
A. Oh, I was in that business, more or less, ten years.
Q. 7. What is your business now?
A. I am a traveling salesman.
Q. 8. What is your line?
A. I am employed by the bankers' committee in Chicago and the creditors' committee.
Q. 9. What do you sell?
A. We sell a bankrupt stock of books. I work for the First National Bank and the Metropolitan Bank. Mr. Gilbert is president of the Metropolitan and is chairman of the committee which employs me.
Q. 10. You got a taste of the cure business and went into it yourself, did you?
A. Yes.
Q. 11. You used to brag, when you were in the business that you had the same remedies as the Leslie E. Keeley Co., didn't you?
A. Yes, sir.
Q. 12. You so addressed the public, did you not?
A. Yes.
Q. 13. Did they ever undertake to stop you?
A. No, sir.
Q. 14. Did you ever have any conversation with Oughton in reference to it?
A. I never saw Oughton but once since I left there; I met him one day on Adams Street, near La Salle Street, when he was going to the train and we had a friendly chat together.
Q. 15. Was anything said about your respective cures at that time?
A. Why, there wasn't much. I asked him what made Judd so bitter against me and he replied in his characteristic way, "Why, you claim so darned much," and I said, "Why, John, I don't claim any more than I can prove; I was a partner, wasn't I? I knew the formula, didn't I?" Oughton said, "We have changed the formula since them; we have a hypodermic injection now." I said, "Oh, thunder, so have I; what difference does it make?" That was substantially what was said; just a friendly talk; that was all.
And further deponent saith not.
Above changes and interlineations were made by me before signing. F. B. HARGRAVES.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

DELAWARE State Medical Examining Board, Dover, December 10, and by the Homeopathic Board at Wilmington on same date. Secretary of the Medical Council, Dr. P. W. Tomlinson, Wilmington.

OKLAHOMA State Board of Medical Examiners, Guthrie, December 10-11. Secretary, Dr. J. W. Baker, Enid.

OHIO Board of Medical Registration and Examination, Columbus, December 10-12. Secretary, Dr. George H. Matson, State House, Columbus.

IOWA State Board of Medical Examiners, Capitol Building, December 10-12. Secretary, Dr. Louis A. Thomas, Des Moines.

MARYLAND Board of Medical Examiners, 847 N. Eutaw St., Baltimore, December 10-13. Secretary, Dr. J. McP. Scott, 129 W. Washington St., Hagerstown.

KENTUCKY State Board of Health, Louisville, December 17. Secretary, Dr. J. N. McCormack, Bowling Green.

VIRGINIA Medical Examining Board, Staunton, December 17-20. Secretary, Dr. R. S. Martin, Stuart.

The Training of the Future Physician.—That the physician of the future should be better educated and should have a more thorough training in the latest methods of laboratory technic is becoming more and more evident when we consider the trend of modern medicine and the overcrowding of the profession. It is also quite evident that this training can only be secured in medical colleges having well-equipped laboratories and having finances sufficient to secure thoroughly trained instructors to conduct these laboratories. It might be added that the teaching of the modern laboratory course requires an expert who must be paid to devote his entire time to teaching, to research and to the preparation of the materials used in instruction.

Among the strongest arguments recently advanced supporting the above statements are those in an article in the *Lancet* (London), October 5, by Dr. William Ewert, who calls attention to the crisis confronting the medical profession due to the profession's immensely growing success in reducing the prevalence of disease and the corresponding reduction in the incomes of medical practitioners. Since the best work of the medical profession is for the public good in the prevention of disease, the profession has the right to look to the state for its remuneration which would otherwise be reduced below a living wage. In the future the function of the physician will be more toward "the prevention of disease and of the cultivation of health," which will require "research for both of those objects." The work of the physician in an advisory capacity will doubtless increase in the efforts to promote the highest mental and moral development of humanity. There will be more inspectors of public schools, more sanitary officials and the forces of public health bureaus will be increased. More trained experts will be employed in the study of tuberculosis, of cancer and of other diseases which have thus far baffled the highest skill of the profession. The future physician must, therefore, have a higher degree of efficiency. He must have a much better preliminary and medical education. He must be proficient in modern languages and in the sciences. He must be thoroughly trained in research in the laboratory as well as in clinics and the hospital.

As an ideal of the future medical school, Dr. Ewert points to Harvard University, not only because of its high standard of preliminary education, but because it will have its clinical work in close contact with its laboratories. Dr. Ewert is opposed to taking the scientific branches too far from the clinical. He says: "Science and clinics are as body and soul. from start to finish inseparable and not to be grown as pure cultures in separate incubators. . . . In that direction we are learning another great lesson from Harvard University. . . . All honor to the city of high ideals for having for the first time in the history of medicine built the halls of science first, around which three hospitals are to grow up for the better service of the healing art." We fully agree with Dr. Ewert that there should be "more hospitals by all means, but that the first need is for laboratories."

Colorado October Report.—Dr. S. D. Van Meter, secretary of the Colorado State Board of Medical Examiners, reports the written and oral examination held at Denver, Oct. 1, 1907. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 70. Forty-nine applicants were licensed at this examination, 9 of whom passed the examination, and 40 were registered on presentation of satisfactory credentials. It is also reported that 3 candidates failed at the July examination. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Colorado School of Med.	(1906)	74.5
Denver and Gross Coll. of Med.	(1907) 75, 76.2, 76.5,	82.8
Rush Med. Coll.	(1907)	70.6
Hering Med. Coll.	(1905)	74.5
University Med. Coll., Kansas City	(1900)	73.3
Tennessee Med. Coll.	(1891)	70.1
REGISTERED ON CREDENTIALS.		
Chicago Coll. of Med. and Surg.	(1907)	
College of P. and S., Chicago (1902) (2, 1904).	(1883) (1893) (1898)	
Rush Med. Coll.	(1896)	
Chicago Homeo. Med. Coll.	(1886)	
Northwestern Univ. Med. School	(1875) (1900)	
Woman's Hosp. Med. Coll., Chicago	(1886)	
Keokuk Med. Coll., Coll. of P. and S. (1907).	(1892) (1902)	
University of Iowa	(1907)	
University of Iowa, Homeo. Dept.	(1891) (1901)	
College of P. and S., Keokuk	(1874)	
Sioux City Coll. of Med.	(1894) (1898)	
Hospital Coll. of Med., Louisville	(1897)	
Tufts Coll. Med. School	(1898) (1906)	
University of Michigan	(1882) (1884)	
Detroit Coll of Med.	(1907)	
University of Minnesota	(1907)	
Missouri Med. Coll	(1885)	
Washington University, St. Louis	(1897)	
Barnes Med. Coll.	(1905)	
St. Louis University	(1907)	
Creighton Med. Coll.	(1903)	
University of Wooster	(1887)	
Starling Med. Coll.	(1881)	
Medico-Chirurgical Coll., Philadelphia	(1899) (1905)	
Jefferson Med. Coll.	(1893) (1895)	
Knoxville Med. Coll.	(1900)	
FAILED AT JULY EXAMINATION.		
Maryland Med. Coll.	(1904)	58.7
National Med. Inst., Mexico	(1896)	38.5
Non graduate		65.8

Illinois October Report.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, Oct. 23-25, 1907. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 57 of whom 51 passed, 5 failed and one candidate did not complete the examination. The following colleges were represented:

PASSED. College.	Year Grad.	Total No. Exam'd.
University of Southern California	(1904)	1
Bennett Coll. of Ecl. Med. and Surg.	(1907)	1
Chicago Coll. of Med. and Surg.	(1907)	3
Illinois Med. Coll.	(1, 1905); (5, 1907)	6
Dearborn Med. Coll.	(1907)	1
Jenner Med. Coll.	(1907)	1
Hahnemann Med. Coll., Chicago	(1907)	1
Hering Med. Coll.	(1907)	2
National Medical University	(1907)	2
Northwestern Univ. Med. School	(2, 1906); (6, 1907)	8
College of P. and S., Chicago	(1907)	3
Rush Med. Coll.	(1907)	4
Kentucky School of Med., Louisville	(1892)	1
Hospital Coll. of Med., Louisville	(1907)	1
University of Louisville	(1907)	2
Johns Hopkins Med. School	(1907)	1
Tufts Coll. Med. School	(1904)	1
Barnes Med. Coll.	(1, 1903); (1, 1907)	2
University of Nebraska	(1904)	1
Cornell University	(1907)	1
Jefferson Med. Coll.	(1906)	2
University of Nashville	(1907)	1
University of Virginia	(1907)	1
Milwaukee Med. Coll.	(1907)	1
University of Toronto, Ontario	(1906)	1
Queen's University, Kingston	(1907)	1
Royal College of Physicians, London, Ontario	(1906)	1
FAILED.		
Hahnemann Med. Coll., Chicago	(1899)	1
Hering Med. Coll.	(1907)	1
National Med. University, Chicago	(1907)	1
Medical Coll. of Indiana	(1892)	1
University of Lausanna, Switzerland	(1903)	1

Michigan October Report.—Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examination held at Lansing, October 8-10, 1907. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, a total of 75 with at least 50 per cent. in each subject. The total number of candidates examined was 10 of whom 6 passed 3 failed and one candidate did not complete the examination. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Hahnemann Med. Coll., Chicago	(1907)	85.5
Hospital Coll. of Med.	(1907)	86.4
Johns Hopkins Med. School	(1902)	91.6
University of Michigan	(1899)	83.7
Detroit Coll. of Med.	(1904)	87.4
McGill University, Quebec	(1897)	75
FAILED.		
Grand Rapids Med. Coll.	(1907)	*75
Detroit Coll. of Med.	(1907)	**58.4
Jefferson Med. Coll.	(1874)	30.9

* Received a total of 75 per cent. but did not obtain 50 per cent. in gynecology.
** Second examination.

Society Proceedings

COMING MEETINGS.

Southern Surgical and Gyn. Assn., New Orleans, Dec. 17-19.
American Association of Anatomists, Chicago, Dec. 26-27.
Western Surgical and Gyn. Assn., St. Louis, Mo., Dec. 30-31.

IDAHO STATE MEDICAL ASSOCIATION.

Fifteenth Annual Meeting, held at Boise, Oct. 3-4, 1907.

(*Continued from page 1871.*)

Hyperchlorhydria.

DR. F. H. BRANDT, Boise, believes that this disturbed function of the stomach occurs much oftener than is commonly supposed. He referred to many observations and experiments which show that increased acidity may be the result of disturbed functions or morphologic change of the mucous membrane of stomach on the part of the nervous system, and that it may be due to disturbed motility caused reflexly or otherwise. Distinction must be made between hyperchlorhydria and continuous hypersecretion. Diagnosis is made mainly by demonstrating excess of hydrochloric acid in several test meals or in the vomitus. Relief of pain after vomiting or ingestion of

more food or alkalies are suggestive symptoms. In order to get results in the treatment of hyperchlorhydria, he says, we must remember: 1. The primary factors causing the trouble. 2. That the diagnosis is best and most easily made by chemical means. 3. Try to decrease amount of hydrochloric acid secreted by (a) diet, giving foods least liable to produce the secretion; thorough mastication is essential. (b) Give alkalies and fats half hour before meals for their retarding effect on HCl secretion.

Antecedent Pathology of Gastric Ulcer.

DR. HARRY D. NILES, Salt Lake City, Utah, presented the history of several cases in which the clinical evidence, in his opinion, illustrates how other inflammatory lesions within the peritoneal cavity may be associated with gastric ulcer, probably as a causative factor. In experiments on dogs he demonstrated, to his own satisfaction at least, that immobilization of any part of the stomach wall detracts from the natural powers of the stomach to protect itself from the corroding and digesting action of the normal gastric juice. Influenced by these experiments he has noted more carefully the conditions found at operation when gastric ulcer has been associated with other intraperitoneal inflammations with omental adhesions. After reporting a number of cases bearing out the points demonstrated experimentally, he makes the following conclusions: 1. We are justified in discarding the old idea that any blood dyscrasia is the usual exciting cause of gastric ulcer; and may reasonably assume that ulcer here as elsewhere in the body must generally depend on local conditions. 2. Certain known and probably some unknown morbid changes in the gastric juice may render it a chemical irritant capable of producing ulceration of the normal mucosa. 3. Gastric juice possessing only normal physiologic digestive powers, may produce ulcers when the resisting powers of the mucosa are lowered below normal from any one of several local causes. 4. Among these several local causes are emboli, angulation and immobilization or fixation of portions of the stomach walls. 5. With our present knowledge of the frequency of inflammatory lesions near the stomach or connected to it by the omentum or bands of adhesions, we can not consistently exclude these lesions as exciting causes of gastric ulcer. 6. If the above reasoning is sound, we have good grounds for withdrawing a part of the attention we have in the past devoted to the correcting of any blood dyscrasia, imaginary or real, and in our treatment of gastric ulcer, strive to comprehend and if possible correct the local condition, or antecedent pathology, that may be the active potent factor in producing the ulcer.

DISCUSSION OF THE PAPERS OF DRS. BRANDT AND NILES.

DR. U. D. SPRINGER, Boise, reported a case similar to those mentioned by Dr. Niles in which obstinate vomiting was caused by adhesions of omentum to the pelvic organs. Freeing the adhesions relieved the vomiting, but he did not examine the stomach especially for ulcer.

DR. HINMAN reported two cases; one patient complained of infrequent pains, nausea and vomiting, with diagnosis of gastric ulcer. Operation was done and microscopic examination showed atypical growth of basement membrane with areas of epithelial cells beneath basement membrane—undoubtedly a carcinoma engrafted on the base of an ulcer. The second case was diagnosed carcinoma of stomach, but the patient never vomited blood. Gastroenterostomy was done without relief. A second operation—pylorectomy—was done eleven months later and the microscope showed the same condition as in the first case.

DR. JOSEPH BLOODGOOD, Baltimore, said that Dr. Brandt's paper illustrates the present status of our knowledge. The physician should devote more time to the study of the chemistry of gastric ulcer and other lesions of the stomach. The medical treatment is by no means a simple affair. The etiologic points advanced by Dr. Niles are interesting, and experience leaves no question as to the relation of adhesions to gastric ulcer, the immobilization probably causing some change in the secretion of the part affected. In all operative procedures in these cases the abdominal cavity should be carefully searched for any etiologic factors outside of the stomach. The indurated ulcer presents a different and far more difficult problem as to proper treatment. It may disappear, but we are not sure as to its malignancy, and a differential diagnosis at time of operation is impossible in many cases. If it is cancer it should be removed by pylorectomy, if the patient's condition will permit it.

DR. L. HEKTOEN, Chicago, called attention to the influence of micro-organisms in the causation of gastric ulcer. Turck has produced ulcers in dogs by feeding them large quantities of colon bacilli. Dr. Hektoen said that he had seen these experiments carried out and had seen the ulcers and results of the experiments, and it is possible that bacteria exert an influence on change in secretion in causing ulcer.

DR. E. B. MCDANIEL, Baker City, Ore., reported a case in which the pylorus looked malignant and a pylorectomy was done, but on examination of specimen it showed only multiple ulcer.

DR. G. E. HYDE, Rexburg, is particularly interested in the medical treatment of stomach lesions. In Dr. Niles' cases he thinks the ulcers were due to reflex secretory disturbances.

DR. E. F. ROOT, Salt Lake City, considers malnutrition an active cause of ulcer. Sclerotic girls, men exhausted from excesses and indoor life and brainworkers are the usual victims of this disease. Malposition caused by adhesions may cause ulcer by rendering the stomach inactive, but he thinks appendicitis and pus tubes can hardly have a causative effect.

DR. F. H. BRANDT, Boise, said that he could not agree with Dr. Niles that blood dyscrasia does not produce ulcer. He has seen ulcer produced experimentally and thinks that ulcers depend entirely on a local or general dyscrasia.

DR. L. P. MCCALLA, Boise, thinks that the experiments of Turck were very germane to the subject, as bacteria can easily pass through pylorus into the stomach, and when adhesions occur the bacteria can more easily invade the mucosa and cause ulcer.

DR. H. D. NILES, Salt Lake City, said that our knowledge of the subject is still in an experimental stage. There are still a number of things to learn, and he believes that his cases had shown at least a cause of gastric ulcer. The treatment of malignant conditions in this region is going to receive more attention in the future. Many cases seem to be malignant, but the patients get well—hence they are not malignant. On the other hand many patients are supposed to have a benign lesion and later it proves to be malignant.

Early Symptoms and Diagnosis of Pulmonary Tuberculosis.

DR. E. A. PIERCE, Portland, Ore., said that he is confident that the first stage of tuberculosis of the lungs may be demonstrated before bacilli appear in the sputum. Bacilli are usually first found in the sputum when foci soften and invade a bronchus. Great confusion has been caused by some writers who cling to the distinction between non-tuberculous and tuberculous apical catarrh, and the notion of a transition from the one to the other. In studying the symptoms he emphasized the importance of a complete personal and family history, especially going into details of the personal history and noting every abnormal symptom. The physical signs found early are: Unequal expansion-lagging of one apex, uneven dilatation of pupils, red or bluish lines along the gums—red meaning the acute and blue the chronic stage—persistent rapid pulse, increased vocal fremitus and dulness on percussion over apex, roughened and sharpened vesicular breathing, cog-wheel breathing at apex, prolonged expiratory murmur at apex, fine crepitant râles at end of expiration persisting over a given area. Under differential diagnosis he said pneumonia of non-tuberculous nature is almost always confined to the lower lobes, and, further, given apical changes, without previous pneumonia, and when inhalation of dust can be excluded, the diagnosis is almost certain. The skillful use of the fluoroscope may be of much help, though he has made little personal use of it. Iodid of potassium in 3 grain doses for several days has been found of benefit in producing signs of local catarrh over suspected areas.

What Should be the Attitude of the Physician Toward the Tuberculous Patient?

DR. F. M. POTTENGER, Monrovia, Cal., spoke of the progress made in treatment of this disease, and of the difficulties in educating the people and medical profession into the belief

that tuberculosis is curable and preventable. In the light of our present knowledge, the tuberculous patient has a right to hope for and demand a cure, because the disease is curable; and that his offspring and those of his friends who associate with him will not be affected, because the disease is preventable. Tuberculosis yields to rational treatment if applied early. In sanatoria from 65 to 95 per cent. of patients in the incipient stages are restored to health. It is necessary that all physicians be able to treat all diseases with skill, but it is necessary that they be good diagnosticians and recognize disease early and then know what can be done by proper treatment. Tuberculosis will disappear from the homes of civilization, if the profession will recognize the communicability of the disease and understand that the infectious agents are in the sputum and other discharges from tuberculous ulcers. Cooperation on the part of the medical profession with health boards and an intelligent public could soon eliminate infection from existing cases. He favors notification, for purpose of instructing patient and cleansing premises after removal. The physician, he said, should never evade telling the patient his true condition as soon as that is determined. Symptoms of great importance in diagnosing early tuberculosis are, lagging of one apex, a general rundown condition, repeated or long continued colds, slight, continuous rise of temperature and pulse, may or may not have slight cough, spitting of blood (pathognomonic), and frequent pleurisy pains.

Methods of Dissemination of Tuberculosis.

DR. W. D. SPRINGER, Boise, reviewed the literature thoroughly, and mentioned the various known sources through which infection occurs.

DISCUSSION OF PAPERS BY DRS. PIERCE, POTTENGER AND SPRINGER.

DR. KELLOGG said that he is acquainted with the work of both Pierce and Pottenger, having sent patients to both men. He emphasized the importance of early diagnosis. There seems to be a hesitancy on the part of physicians to diagnose this disease. In view of the great and universal prevalence of this disease, pleurisy with effusion is practically always tuberculous. The condition diagnosed so often as intercostal neuralgia is nearly always a pleurisy pain, and should arouse suspicion at once, especially if there is a coexisting rundown condition.

DR. L. HEKTOEN, Chicago, spoke of blastomycosis as a condition which might cause confusion in diagnosis, especially the pulmonary form of blastomycosis. He has seen tuberculosis develop on top of a blastomycosis. Most of these cases so far have been seen in or near Chicago, but it is likely that cases occur elsewhere also.

DR. J. PRINZING, Ontario, Ore., said that he is frequently asked as to infectiousness of tuberculosis, and requested to fumigate and clean up after a death. People are learning of the good that is being done. In his experience, however, he has learned that a man living out doors previously, who gets tuberculosis, is all in, while the man living indoors has good chances for recovery. He thinks that treatment by general practitioners is practically *nil*, as they lack time and experience to teach patients how to live.

DR. E. VAN NOTE, Boise, thinks that the statement of Dr. Pottenger that 75 per cent. of postmortems show either a latent or cured tuberculosis should lead physicians to be more on the lookout for this disease. Dr. Van Note called attention to what he called lazy breathing on forced respiration, though normal when breathing regularly, as a possible early sign of tuberculosis, and when this symptom exists he advises patients to get outdoors. He also spoke of a method of auscultation during forced expiration as showing increased breath sounds over infected areas.

DR. J. J. HAMILTON, Caldwell, spoke of the necessity of informing the patient of his exact condition that he might have proper early treatment, but he thought much harm could be done if this "telling" were done in a heartless manner.

DR. E. A. PIERCE said that he considers the lagging apex as a most important symptom and is glad to note that others are of the same opinion. He agreed with Dr. Pottenger that frequent and repeated colds are often incipient tuberculosis. He believes that pleurisy is tuberculous, and when it exists he would not dare tell the patient that he was not tuberculous. The suggestion by Dr. Pottenger in regard to digesting the sputum with papoid or pancreatin and soda before sedimenting and examining, is an excellent one and he intends using it. The feather duster and the broom are most dangerous methods of dissemination. The lazy respiration is a point of great importance, and the Van Note method of auscultation also.

DR. KELLOGG said that he had used tuberculin for diagnostic purposes in dosage of from 1/10 to 5 milligrams, in 70 cases, with no bad results. He thinks that there is no question as to its specific value. Over 400 injections were recently reported from Johns Hopkins Hospital, and Dr. Rotch of Boston and Dr. Trudeau have also used it extensively.

DR. G. P. HALEY, Boise, asked what percentage of cases are acquired and what inherited.

DR. F. M. POTTENGER, Monrovia, Cal., said that we could discard heredity entirely as a causative factor, for the disease is not inherited at all. He insisted on the physician making an early diagnosis, and not discourage the patient. Fifty per cent. of the patients treated show arrest of the disease and a large percentage are cured. He considers a patient cured if after two years there are no symptoms or signs of existing disease. Early diagnosis can and ought to be made without use of tuberculin. He has no use for a stethoscope that magnifies sounds. In regard to râles he said that a diagnosis should be made without finding them, but before deciding that they are not present deep breathing and cough should be tried to bring them out. He said that he has used tuberculin some 150,000 times and has never seen a latent disease lightened up, so such an occurrence must be unusual. He spoke of a new method of giving tuberculin to children by rubbing two or three drops of mixture composed of crude tuberculin 2 parts, sodium chlorid 2 parts, and 5 per cent. carbolic acid solution 1 part. In regard to dosage, it is not necessary, in giving tuberculin, to rely on the fever, but a grippy condition or a sensation of malaise is just as suggestive. Always look at point of infection for the reaction. He begins with 1/10 mg., then waits three days and gives a larger dose; the preliminary small dose seems to exaggerate effect of second dose. Tuberculosis is primarily a glandular disease and affects the lymph glands and channels. Universal immunization will probably come in time. Most patients are infected in closed rooms; the disease rarely occurs out of doors. The greatest danger is from a patient in the home without ventilation. It is a well-known fact that it is more difficult to cure a man who has always been out of doors, therefore there is more than fresh air in the treatment. We must add inoculations of tuberculin and raise the resisting power of the patient.

(*To be continued.*)

VERMONT STATE MEDICAL SOCIETY.

Ninety-fourth Annual Meeting, held at St. Johnsbury, Oct. 10-11, 1907.

(*Concluded from page 1869.*)

Autointoxication.

DR. H. C. JACKSON, Woodstock, said that the researches of Pasteur, Lister and Koch have been the means of modifying clinical medicine in many respects. Bouchard has given us his theory of autointoxication by metabolic products and toxins formed in the gastrointestinal tract. Self-poisoning is prevented by the action of the kidneys and liver. In eclamptic patients the blood has become poisoned by these toxins because some organ has failed to convert them into useful bodies. Morning sickness of pregnancy is another instance of the presence of these toxins. In order to eliminate them from the system the kidneys should be looked to. If their function is impaired digitalis should be used with caution. In indigestion and intestinal obstruction we get an absorption of these toxins which affect the central nervous system. We may also observe it in overexertion of the brain. There is no doubt but that the poisons are principally absorbed from the gastrointestinal canal. The treatment of this condition should be in decreasing the supply of nitrogenous foods. Give a simple

diet, milk being the best; flush the colon with physiologic salt solution and give calomel in small and repeated doses, followed with a saline.

DISCUSSION.

DR. DAVID MARVIN, Essex Junction, said that the organs of arrest are the liver, spleen and thyroid glands; of elimination, the kidneys, gastrointestinal mucous membrane, bronchial mucous membrane and the skin. We must strengthen the means of defense in this condition.

DR. R. C. WHITE, Willimantic, Conn., said that errors in diet are the most important cause of this disease. The treatment of the condition is rather unsatisfactory at present; washing out the bowels with physiologic salt solution is the best.

The Practice of Medicine as a Business.

DR. J. F. BLANCHARD, Newport, said that physicians are very seldom successful business men. As the practice of medicine is an indispensable branch of human industry, there should be no reason why it should not yield returns equal to other vocations. Seldom do we hear of a physician leaving more than a competency to his family, and frequently less. There is no class, the clergy, excepted, with the same expenditure of brain force, but receives more. The fault is with the members of the profession themselves. They are careless in all their business affairs, not looking after and demanding their just due as a strictly business man would do. He said that the general practitioner was receiving now about the same fees that he got fifteen or twenty years ago, but that the purchasing power of the money received had lost nearly half of its value. The industrial prosperity of the country had been of but little value to the physician. As the public will never advance the fees it is for the profession to take action. All corporations and companies employ competent bookkeepers and he thinks that it would well repay physicians to do so. No one could do his best work while hampered by poverty. He said that this could be done without lowering professional standing or dignity.

DISCUSSION.

DR. A. B. BISBEE, Montpelier, said that we do not need a better organization along the lines of trade unionism, but a better preparation. By so doing and by hard work the physician could command high fees.

DR. F. R. STODDARD, Shelburne, said that the people should be educated to pay the physician's bill with the same promptness as they pay the butcher and grocer.

DR. BLANCHARD said that we should look after our fees and collections better because more is demanded of us. We must spend more in preparation, more for our library and instruments, and in order to keep abreast of the times it is necessary to take a postgraduate course once in two or three years.

Cystoscopy and Catheterism of the Ureters Valuable Aids in Diagnosis and Treatment.

DR. A. L. MINER, Bellows Falls, said that although cystoscopy has been in use for nearly a century it is only within the last decade and a half that it has been put to practical use. By its means one can diagnose a saccurated bladder, foreign bodies, tumors, ulcerated and inflamed conditions of the bladder and orifices of the ureters. By ureter catheterization one can tell whether the bladder or kidney is involved, can determine the absence of a kidney, the capacity of each kidney for work, the presence of calculi in ureters or kidney strictures, the site of ureteral fistulæ, the diagnosis of pyelitis, pyelonephritis, pyonephrosis, movable kidney, neoplasms and renal lithiasis. It is of therapeutic value in the cure of pyelitis to drain pocket formations, dilate strictures of ureters, drain kidney after nephrotomy, to cure renal fistulæ, and as a guide in certain operations on the pelvis of kidney.

Home Treatment of Tuberculosis.

DR. H. H. LEE, Wells River, spoke of the laws that had been enacted by the state to prevent the spread of this disease, the commissions that had been appointed and the sanatoria that had been built; but, he said, in a very large percentage of all cases the treatment must be in the home. There are estimated to be 2,000 cases of this disease in Vermont, and the new sanatorium that has just been completed will only accommodate about thirty. Physicians, he said, should be more careful in the examinations of patients with any symptoms of lung trouble. Any cough may be serious. Have an examination made of the sputa. He thinks it well in all cases to inform the patient of the nature of his disease so that he will cooperate with the physician. In incipient cases fresh air and sunshine are the most important. In summer the common wall tent is the best, or a wide veranda screened with cotton cloth or duck. Or a room with the windows removed and cloth put up will do. In winter one of the best expedients is to have the patients go up into the wide open attic with windows removed. The window tent and shack are good. Next to fresh air, good food is the most important. Meat and vegetables are given twice a day and milk and eggnogg between meals. Also eggs in beef broth or chicken broth. It is very important that the patients should have rest; all patients who have a temperature of 99 F. should lie down or go to bed. Great care should be exercised in looking after the sputum.

DISCUSSION.

DR. W. N. BRYANT, Ludlow, said that we must try to duplicate in the home the treatment given in the sanatorium. It is very essential to make an early diagnosis, and this can only be done by making a thorough examination. Give the patient a thermometer and have him bring it to you daily so that you can see the highest temperature for the day.

DR. H. L. BARNES, Wallum Lake, R. I., said that they did not get the patients at the Rhode Island sanitarium until about two years after the disease had started. Forty-six per cent. had been diagnosed as something else. One should require all patients with a temperature of 99.4 F. to lie down, and those with a temperature of 100 F. to keep in bed. Exercise is liable to produce hemorrhages.

Relations of the Medical Profession to the Public Health.

DR. HENRY D. HOLTON, Brattleboro, said that the great medical achievement of the nineteenth century was the discovery of dirt; that of the twentieth will be cleanliness, sunlight and fresh air. Pure food and pure drink will take the place of drugs. The profession should take a high and broad view of life and try to be the means of prolonging life by improved sanitation. The general public are demanding this of their physicians. He said it is the duty of the family physician to look after the water and food, especially the milk, of his patients. Practically all the states have a State Board of Health. Vermont was one of the first to establish a state laboratory, which can be used, free of charge, by the profession. It also publishes quarterly a bulletin giving information in regard to the laws, rules and regulations of the board. Vital statistics have been recorded in the state since 1857. At that time the average age at time of death was 38. In 1906 it was 48. In the first period there are found to be one person in 754 who lived to be 80 years old or more. In the last period one in every 425. From the communicable diseases, typhoid, measles, scarlatina, whooping-cough and tuberculosis, there was one death in every 266 of the inhabitants in 1857. In the last period only one in 571. The deaths from tuberculosis in 1857 were in the proportion of one to 370 of the inhabitants. In 1906 only one in 772. On the other hand, there has been an increased mortality in some diseases. In 1906 the death rate from cancer was nearly four times as high as in 1857; from pneumonia, three times; from heart disease, four times, and from apoplexy, more than five times as many as in 1857.

DISCUSSION.

DR. C. S. CAVERLY, Rutland, said that state boards of health are of no avail unless the profession takes hold and helps. Public opinion is back of all, and the public should be educated by the profession in matters of health, especially in regard to contagious diseases. The state board deeply appreciates the royal support that has ever been given it by the medical profession of the state.

Puerperal Sepsis.

DR. J. C. BREITLING, Lunenburg, said that antisepsis was first practiced in lying-in hospitals sixty years ago, when the death rate was extremely large, but the mortality has since been

brought down to 5 per cent. But the death rate as a whole from puerperal sepsis has scarcely been decreased. This is caused by the carelessness and ignorance of midwives, the uncleanliness of the rank and file of the profession and by not recognizing the earliest symptoms of infection and properly treating the same. Infection largely due to the streptococcus, colon bacillus and gonococcus. Nearly all cases originate from without, although latent gonorrhea may produce autointoxication. Injuries of the organs at confinement, retention of fragments of placenta or blood clots and severe hemorrhage are some of the direct causes of the disease. Preventive treatment consists in rigid asepsis during labor and the puerperium; cleaning the parts with green soap and bichlorid of mercury and the use of sterile gloves and instruments, towels, etc. For active treatment irrigate the uterus with sterile water or physiologic salt solution. If débris comes away, curette gently. In general septicemia local treatment is of no avail. Suppurative and symptomatic treatment is now called for.

Vomiting of Pregnancy.

DR. J. REYNOLDS PATTON, Fairfield, said that the vomiting of pregnancy may be caused by uterine displacements, cervical ulcerations, cervical bands of constricture, constipation, albuminuria, hysteria and mental distress. Treatment consists in correcting any of these conditions, which can easily be determined by an examination. No food should be given by the mouth for a time, but alimentation by the rectum and rest in bed. Strong sedatives are advisable at times. Treatment should be commenced early. In pernicious vomiting with the rejection of all food, mental apathy, rapid and feeble pulse, cold extremities and occasional fever the induction of abortion is demanded.

Causes of Death.

DR. C. F. DALTON, Burlington, said that the international classification of the causes of death is now universally used. In making out a death certificate it should state the primary cause and also the contributing cause so that the exact pathologic conditions existing can be understood. Physicians as a rule are not specific enough. The following, as causes of death, are some of the examples: Septicemia, anemia, marasmus, inanition, asphyxia, debility, catarrh, dropsy and heart failure. The real cause of death in many cases is not from the disease from which patients suffered. For example, in pneumonia the cause of death in many cases is a paralysis of the heart due to toxemia, or a pulmonary edema. Many patients with chronic Bright's disease, arteriosclerosis, heart disease and cirrhosis of the liver die with acute tuberculosis of the pleura or peritoneum. Edwards states, he said, that from 30 to 50 per cent. of all fatal cases of typhoid end in toxemia; from hemorrhage, 20 per cent., and from exhaustion due to the diarrhea, 16 per cent. Deaths from diphtheria and scarlet fever are caused from the effect of the toxins on the heart and kidneys. Autointoxication is the real cause of death in many diseases of the kidneys.

BOSTON MEDICAL LIBRARY MEETING.

Meeting held November 13, 1907.

DR. J. C. MUNRO, Chairman.

Treatment of Inoperable Sarcoma with the Mixed Toxins of Erysipelas and Bacillus Prodigiosus.

DR. WILLIAM B. COLEY, New York City, said that laboratory tests on animals have been made recently which confirm the clinical observations previously made. Thus it has been found that sarcoma in a dog will disappear following the administration of the toxin of *B. prodigiosus*. Dr. Coley had himself successfully treated and reported 43 such cases of inoperable sarcoma and knows of some 6 others. None of these is of less than three years' standing and the lesions have been located at all parts of the anatomy. The remedy is useful only against sarcoma and not against carcinoma. Hence the need of careful diagnosis. It is applicable in cases that are inoperable. 1, because of the location of the tumor; 2, because of a late diagnosis; 3, because of recurrence; 4, because, though operation is possible, it is refused by patient or friends. These constitute 75 per cent. of the cases and toxins may be useful in all of them, even in those of melanotic sarcoma. They may further be used to secure three or four weeks' delay and enable the patient to be fitted for operation and as a safe experiment in case of sarcoma of the long bones, thus possibly avoiding an amputation. Not more than two or three weeks of such delay is justifiable unless the good result of the injection is at once apparent. If at the end of a week the tumor is rapidly growing it is probably best not to delay operation further. Resection is sometimes possible, however, instead of the amputation, following the operation by toxin treatment. Dr. Coley has had 13 cases of such sarcomata of long bones which have recurred without operation and are now well, from 3 to 9 years later. He always uses the toxins after operation and finds recurrence then rare. It is well known that without such treatment 75 per cent. of sarcomata do recur. It does not cause metastasis therefore. This treatment is by no means yet a certain thing. Dr. Coley has treated 400 cases and in 43 has secured a disappearance of the tumor which in 27 cases has remained permanent for from 3 to 15 years.

The cases now undertaken are less severe and the method of treatment is better understood. No case is too hopeless, though of the 30 cases of melanotic sarcoma which he has treated none has been benefited. With judicious and proper precaution there is no appreciable risk. Of his 400 cases, the death of only 3 could be by any means attributed to the treatment and these were all in the last stages. Two had mediastinal involvement, received only two or three days treatment and died suddenly, possibly of embolism. Rarely was the maximum dose 10 minims, yet as many as 30 minims have been given without fatal effect. From 1¼ minims, however a reaction of 105.6 F. has occurred. For the last year the bacilli for the preparation have been grown separately. A complete description of the method employed is contained in the article in the *Medical Record*, July 27, 1907. This method produces a remedy which is carefully standardized, powerful and efficient. Kept in glass stoppered bottles, on ice, in the dark the virulence lasts for at least 8 months, but Dr. Coley always uses that only a few weeks old. The dose varies with patient. It is best to give an adult at first ¼ minim, and a child proportionately less diluted with sterile water. A chill is to be expected in from ½ to 3 hours, and a temperature of from 102 to 104 F.—it may be 107 F. Temperature and pulse must be watched. It is best to inject outside of tumor at least at first, e. g. in the buttocks or pectoral muscles. At first it should be given every other day or three times a week. Later, daily is better, if the patient can bear it. Reduce the dose at times of menstruation. After a while allow a week of rest. Give tonic of iron, quinin and strychnin. Injection should be made near the tumor. Dr. Coley now uses the systemic injection more often than formerly. Improvement may be expected in a day or two or at least within two weeks. The tumor should become smaller, more movable and less vascular. If no gain is seen within 4 weeks none is likely. If the patient improves continue treatment from 2 to 4 months and sometimes even 1 year. It has been used in small doses for a period of 4 years. It may retard growth if it does not cure. It is necessary to have a good hypodermic syringe in which one can accurately measure. If the dose is less than 1 minim, dilute with boiled water. Dr. Coley sometimes applies carbolic solution to the skin to lessen pain, but often the injection itself will stop the pain in the tumor almost immediately. Injections should be given deep, not subcutaneous. Judicious dosage is necessary.

Prophylactic use gives by far the best record as to recurrence. The smallest dose should be used and a reaction of only 99 or 100 F. expected. Give two or three times in a week for two or three periods of three or four weeks each. In conclusion Dr. Coley affirmed his belief that no case is too desperate to be treated and cited histories of several cases in support of his belief.

Trypsin in the Treatment of Cancer.

DR. WILLIAM P. GRAVES since September, 1906, has treated six undoubted cases of cancer with trypsin, all were recurrent, five of the breast and one of the cervix. All had been treated surgically. He gave from 3 to 5 minims up to 40, 60 or even

80 minims, daily or twice a week. Four patients have already died and the other two will do so. But the treatment helps to prolong life and keeps the nodules under control.

Mixed Toxins in the Treatment of Leukemia.

DR. R. C. LARRABEE reported several cases in which he had used this method successfully. Reaction is absent in small doses, improvement is often rapid but the pain is severe. As compared with the *x*-ray, it is a rival but does not excel the latter.

DISCUSSION.

DR. JOHN BAPST BLAKE, showed a woman who nine years ago had a sarcoma of the shoulder of the giant cell type. Entire removal of the shoulder girdle seemed the only hope and was refused. Mixed toxins were tried in dosage of from 12 to 15 minims toward the last and entire recovery has resulted. She had good motion, no recurrence and did the work for a family of 5.

DR. SAMUEL J. MIXTER believes few know just how to use the toxins, hence the poor results and the need of a paper like Dr Coley's. He cited a case in which the disease has been held stationary by the administration of small doses. Large tumor masses need larger doses.

DR. ARTHUR T. CABOT finds that patients rebel because of the discomfort. Is more successful as a prophylactic against recurrence.

DR. GEORGE H. PACKARD has found that the toxins do nothing for carcinomata but he has had several successes in treating sarcomata.

DR. COLEY said that in view of the fatal case reported with the dose of ¼ minim he would advise a smaller dose for the first one. The value of making an inoperable tumor an operable one is important. He reported another case of leukemia to add to those of Dr. Larrabee's and affirmed his belief that Hodgkin's disease is a form of sarcoma. He also has found that the leukemia patients can not stand the large doses and hence this treatment can not be pushed.

Medicolegal

Keeley Chlorid of Gold Cure Refused Protection Because of Fraud on Public.

After the United States Circuit Court of Appeals, Sixth Circuit, had dismissed the first appeal of the Memphis Keeley Institute and others vs. the Leslie E. Keeley Company on a technicality, the United States Circuit Court for the Western District of Tennessee, entered a decree enjoining the defendants (appellants in the higher court) from claiming that they had a right to and were in fact administering Keeley remedies at the Memphis Keeley Institute, etc. The second appeal followed.

The main ground on which the appellants claimed that the decree of the lower court should be reversed was that the appellee (plaintiff in the court below) did not come into that court with clean hands, and therefore was not entitled to the relief it sought and that was granted to it. The position that it did not so come into court was undertaken to be maintained in this way: The business in which the appellee was engaged, to-wit, administering, and selling to be administered, what were known as Keeley remedies for the opium, liquor and tobacco habits and neurasthenia, and which was sought to be, and by the decree was, protected from injury and invasion by the appellants, had been built up and was being maintained by certain fraudulent misrepresentations. This position was urged on the lower court and it was claimed that because of it the bill should be dismissed. But it refused to so hold and, as stated, granted to the appellee (plaintiff) full relief. This it did for two alleged reasons: One was that the evidence did not establish the position that the appellee's business had been built up and was being maintained by any such misrepresentations. The other was that even if it did, that fact was not against the appellee's right to relief.

But the Court of Appeals holds, on the second appeal, that this was all wrong, and that the bill of complaint must be dismissed. Taking up the first of the two reasons given for the decision of the lower court, it says that the alleged fraudulent misrepresentations relied on were numerous. The main one was that gold is the principal ingredient and effective agent in said remedies. This court limits consideration to this alleged fraudulent misrepresentation because it is constrained to hold that the claim of the appellants in regard thereto was made good by the evidence.

It was not disputed that the appellee represents to the public that gold is the principal ingredient and effective agent in its remedies. So distinct, repeated and emphatic has been and is its representation to this effect, that it must be held that its business has been built up and is being maintained by this representation. The name which it has given its remedies and by which they are known, is the "Double Chlorid of Gold Cure." There is no such substance as the double chlorid of gold. There is a chlorid of gold and a chlorid of sodium. The claim was that these two substances were ingredients of the remedies and to voice the claim the short form of double chlorid of gold was adopted. It was intended to designate that the remedies contained the two chlorids of gold and sodium.

Continuing, the court sets forth various claims on the labels and in circulars indicating or claiming gold in the remedies, and says that the sole question at issue in regard to this representation was as to whether it was a misrepresentation and fraudulent, i. e., intended to mislead and deceive the public. If it were untrue and known to be so, the rest followed.

The record, the court then says, contained positive evidence to the effect that it was untrue and known to be so. It contained no affirmative evidence that the representation was true. The appellee contented itself with the position that the appellants had failed to make good that it was a fraudulent misrepresentation. And the case hung here on the correctness of this position.

The positive evidence consisted of the testimony of a former partner of Dr. Leslie E. Keeley, and, according to his testimony, the originator jointly with Dr. Keeley of the remedies and the business, and of an analytical chemist, to whom certain bottles purporting to contain the remedies were submitted for analysis, pending this litigation. The witness first referred to was named Frederick B. Hargraves. [His testimony is given in full in THE JOURNAL, Nov. 30, page 1861, and Dec. 7, 1907.]

The ground on which the lower court held that the fact that the appellee's business may have been built up and grown out of fraudulent misrepresentations to the public was not in the way of its right to the relief it sought, the Court of Appeals says, was substantially this: A dismissal of the bill for that reason would aid the appellants in practicing the very same fraud on the public that it was claimed that the appellee was practicing, and would, therefore, put the court in an inconsistent position. The way in which it was thought that such a dismissal would have this effect was that it would amount to an adjudication that the appellant, Memphis Keeley Institute, had a valid subsisting contract with the appellee, and thereby enable it to obtain remedies from the appellee to administer to patients. But such a dismissal could not possibly have any such effect. It would not be an adjudication as to the rights of the parties as between themselves. It would be a direct refusal to make any such adjudication. And a court of equity will not aid a plaintiff who comes before it with unclean hands, even though by not doing so it deprives itself of the opportunity to prevent the defendant from doing the unclean thing, and thus may be said to indirectly aid the defendant in so doing. In the fig syrup case the defendant was taking the plaintiff's business by unfair competition and was practicing the very same fraud on the public, because of which the court refused to aid the plaintiff, yet the court did not stop him from so doing by granting the plaintiff injunctive relief, but turned the plaintiff out of court.

Counsel for the appellee cited and relied on a number of cases which hold that a court of equity will not turn out of court an unclean man, or a man who has done an unclean thing which has no relation to the thing which it is sought to have protected by its decree. But such decisions had no application here. The uncleanness here had to do with the very thing which the court was asked to protect and prevent from injury and invasion by the appellants.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal.

November 23.

1 Study of Sago Bodies and Other Vesicular Elements in Massage Urine in Their Relations to Diagnosis. De Santos Saxe, New York.
2 *New Staining Method for Micro-organisms. H. G. Piffard, New York.
3 Surgical Splinting. E. A. Tracy, Boston.
4 Bilaterality and One-Sidedness in Diseases of the Eye. H. Gradle, Chicago.
5 *Frenzied Surgery of the Abdomen. J. W. Kennedy, Philadelphia.
6 Perineorrhaphy. R. A. Barr, Nashville, Tenn.
7 *Use of Parathyroid Gland for Paralysis Agitans. W. H. Berkeley, New York.
8 Sarcoma of the Eyelid. H. S. Wieder, Philadelphia.
9 Pediatric Hints: Easy Rules for Calculating the Percentage Method of Infant Feeding and for Remembering Weights and Heights of Children at Various Ages. L. H. Schwartz, New York.

2. **A New Staining Method for Micro-organisms.**—Piffard describes a new method of staining bacteria without the necessity of heating the slide, which shrivels up the organisms and obscures the details of their structure. He uses the following "cyanid blue solution:" R. Distilled water, 100 parts; potassium cyanid (pure), 1 part; potassium carbonate (dry, C. P.), 0.5 parts; rectified methylene blue, 0.5 parts. A small drop of the stain is placed on the center of the slide. To this is added a loopful of the desired bacterial or other culture, mixing it gently with the stain and preserving the drop form as much as possible. At the end of a minute a clean cover glass is applied and after being pressed down the excess moisture is absorbed with blotting paper. It is now ready for immediate examination. With a little practice this method will render possible the immediate examination of milk without the unavoidable delay occasioned by waiting for the development of colonies.

5. **Surgery of the Abdomen.**—Kennedy makes a strong plea for more apprenticeship in abdominal surgery. He asks, "Where does the education of laparotomists begin?" and replies, "With the examination of the female pelvis." The practitioner who follows his patient to the operating room is the one who becomes an accomplished diagnostician and an ardent cooperator. The necessity for constant reoperations is a surgical reproach.

7. **Paralysis Agitans.**—Berkeley considers paralysis agitans from the three viewpoints of laboratory work, autopsy findings and clinical results from administration of the parathyroid gland. In regard to the third point he draws attention to the fact that a properly identified gland must be used. Many results have been valueless owing to the fact that almost anything bought at the pharmacy under the trade name of parathyroid gland has been considered good enough to work with. Nothing much in the way of favorable results can be hoped for except from relatively small doses continued through a long period of time. These patients are nervously unstable, which fact must be borne in mind in drawing conclusions. Berkeley has notes or personal knowledge of 30 cases, with the following results: Two patients declined to continue treatment; 2 have not been heard from; 5 denied benefit; 3 showed temporary improvement only; 18 were progressively benefited during the entire period of treatment.

Boston Medical and Surgical Journal.

November 21.

10 *Delirium and Delirious States. H. M. Swift, Boston.
11 *Underfeeding and Its Associated Ills. D. Roberts, Brooklyn, N. Y.
12 *Immunity and Therapeutic Action. T. J. Mays, Philadelphia.
13 Diagnosis and Treatment of Diphtheria in Young Children. F. P. Webster, Portland, Maine.
14 Simple Method of Reconstructing Nerve Plexuses. R. M. Smith and E. W. Taylor, Boston.

10. **Delirium.**—Swift considers the fundamental attribute of most deliriums a disturbance of consciousness, using that term to imply the condition of mind under which external stimuli produce cerebral changes of some sort of which the subject immediately becomes cognizant and which he is accustomed to regard as ideas, feelings, etc. (Kraepelin). He discusses fever delirium, delirium tremens, the causes of delirium, the differential diagnosis, the treatment and prognosis. In regard to treatment a continuous warm bath, he states, is generally preferable to soporific drugs as a quieting measure. The patient is kept in a bath at from 92 to 95 F. until restlessness subsides, when he is put to bed. This method of treatment is particularly useful in delirium tremens, but must be used with caution in asthenic conditions. Heart stimulants, such as alcohol, strychnin and digitalis may be indicated, but in alcohol delirium or in the presence of polyneuritis alcohol must be avoided. In threatened delirium tremens during enforced abstinence, Swift is inclined to side with those who believe that small doses of alcohol are beneficial. It may be distinctly beneficial in senile delirium. Regular nourishment, by the tube if necessary, is important. The prognosis depends on the presence or absence of an underlying incurable cause.

11.—Abstracted in THE JOURNAL, Feb. 23, 1907, page 721.

12. **Immunity.**—Mays discusses this subject from the philosophical standpoint. He regards immunity not as an independent entity or condition, but as an integral and essential part of all living matter. He instances tobacco poisoning and seasickness immunities as cases in which bodily conditions have been forced to rearrange themselves into other but also normal attitudes by the influences of unfriendly external forces. When two forces of unequal strength come into contact with each other, the stronger causes the weaker to move in a direction parallel to its own, and to a point where a mutual balance takes place; and although the latter may tend to rebound and to assume its former position, yet, through the continuous operation of a series of such impacts, it will finally be forced to seek a new or another state of equilbrium, in which it will remain after the attacking force has ceased to act. He reports a series of experiments with antagonistic drugs, showing their effects on the heart's action separately and combined, and states that several things are made clear thereby. One is, that drugs extend their forces directly on the bodily textures, and not on any hypothetical intervening medium. Another is, that small or minimum doses enhance bodily resistance, and that large or maximum doses depress or paralyze the same. A third is, that minimum doses successfully antagonize the disintegrating effects of maximum doses. Now, if we recognize the fact that disease is but a manifestation of forces which move in a direction adverse to health, and substitute these for the operation of the maximum drug doses in the above illustrations, do we not have a clear picture before us, as to how a large class of drugs in minimum doses combat disease, viz., by stimulation?

Medical Record, New York.

November 23.

15 *Perineal and Perirectal Abscess. C. B. Kelsey, New York.
16 Surgical Treatment of Ulcer of the Stomach. O. Kiliani, New York.
17 *The Nose in Its Relation to Epilepsy. W. S. Bryant, New York.
18 *Indications for Ergot Aside from Its Obstetrical Uses. A. T. Livingston, Jamestown, N. Y.
19 *Action of Radiant Light Bath in Nervous Diseases. T. D. Crothers, Hartford, Conn.
20 Motor Paralysis as Early Sign of Tabes Dorsalis, with Report of Two Cases. C. D. Camp, Philadelphia.
21 Misuse of the Voice and Its Cure. Articulation. N. J. P. Van Baggen, The Hague, Holland.

15. **Perianal Abscess.**—According to Kelsey, in superior pelvirectal space abscesses good results may be obtained by securing free evacuation without cutting into the bowel. A curved incision in front of the anus will usually be efficient if the pus is in the anterior part of the perineum. More often the incision both for these and for the retrorectal variety will need to be posterior and should begin with a free division of the sphincters in the posterior median line. By blunt dissection a way can be made between the levator and the rectum, and the pus cavity on either or both sides thoroughly drained. Periprostatic abscesses should be opened by the incision for median lithotomy. Unilateral ischiorectal abscesses should be opened when they are confined to one fossa only by the T incision. When they have spread to both fossæ, the first incision should be through the sphincters posteriorly, and from this free cutaneous incisions forming a V should be made in each fossa. In subcutaneous or submucous abscesses the incision

should be in line with the radiating folds of skin and should lay open the entire cavity whether it be chiefly on the skin, on the mucosa, or equally on both. In this way only will fistula formation be avoided. Follicular and thrombotic abscesses do not often form fistulas, but they should be incised freely for their entire extent.

17. **The Nose and Epilepsy.**—As the result of a rhinologic examination of forty-eight out of a group of segregated cases of epileptic insanity at the Manhattan State Hospital, Bryant concludes that epilepsy is a normal symptom consequent on over-stimulation largely reflex in character of the higher centers of the cord and brain. The normal nerve reaction may become pathologic under even insignificant peripheral stimulation. The most common cause of epileptic seizures is reflexes from Schneiderian irritation through the fifth nerve. Appropriate nasal treatment will diminish the attacks. In the epileptic neuroses predisposition or weakened resistance of the central nervous system is due to causes other than the slight exciting peripheral irritations which have previously lessened the self-protective power of the higher nerve centers.

18. **Ergot.**—Livingston follows up previous papers on the uses, other than obstetric, of ergot. From personal experience he has found it of service in disorders of the circulation and blood vessels, in atony of the hollow viscera, in the promotion of assimilation and elimination, the improvement of impaired functional activity, the regulation of the menstrual functions and the preparation for either climacteric, for insomnia, the state denominated "nervousness," neurasthenia, spasmodic conditions such as asthma, chorea, intestinal colic and sphincteric spasm, and uremic convulsions, paralysis, stupor, coma and delirium, pain, zymotic infectious and autotoxemic diseases, and in many surgical cases.

19. **Radiant Light Baths.**—Crothers asserts that the radiant light bath is a remedial measure of the widest appplication and that its possibilities as an agent in restoring diseased cells and tissues are far greater than any present knowledge can explain. The possibility of its use in private practice is becoming greater every year.

Lancet-Clinic, Cincinnati.

November 23.

22 Physiotherapy in Relation to General Practice of Medicine. O. Juettner, Cincinnati.
23 Gelseminine. W. F. Waugh, Chicago.

Journal of Experimental Medicine, New York.

November.

24 *Chemistry of Liver in Acute Yellow Atrophy. H. G. Wells, Chicago.
25 Chemistry and Staining Properties of Certain Derivatives of the Methylene Blue Group when Combined with Eosin. T. M. Wilson, Chicago.
26 Fever: Its Metabolic Changes. I. Ott and J. C. Scott, Philadelphia.

24. **Chemistry of the Liver in Acute Yellow Atrophy.**—From the liver of a young man who died of typical, "idiopathic" acute yellow atrophy of the liver, after an illness of six weeks, there were isolated and identified the following amino-acids: Histidin, lysin, tyrosin, leucin, glycocoll, alanin, prolin, glutaminic acid, aspartic acid. These were found free in extracts of the liver, and presumably represent products of the autolysis of liver cells, although the amount of soluble non-protein nitrogen present in the extracts was so large as to suggest that there must be some other source for these substances. Small quantities of free proteoses and peptones, and of xanthin and hypoxanthin, were found in the extracts. In the insoluble proteins of the liver the proportion of diamino-acids was decreased slightly as compared with normal livers. The proportion of protein phosphorus was increased, probably because of active regeneration proliferation, while the sulphur was normal in amount. Iron was increased because of the large quantity of blood in the liver and the hematogenous pigmentation of the liver cells. Gelatigenous material was increased both absolutely and relatively, because of the loss of parenchyma and the proliferation of the stroma. The proportion of water to solids was much increased, and on comparison with results of the analysis of normal livers, it was found that the amount of lecithin in the liver of acute yellow atrophy was very greatly reduced. Cholesterin was not diminished.

Laryngoscope, St. Louis.

October.

27 *Surgery of the Labyrinth. J. D. Richards, New York.
28 Plastic Closure of Septal Perforations. B. Haseltine, Chicago.
29 X-Ray in Rhinology. H. G. Langworthy, Dubuque, Iowa.
30 Straightening the Nasal Septum. A. W. Watson, Philadelphia.
31 Upper Tracheoscopy and Bronchoscopy. C. Jackson, Pittsburg, Pa.
32 Ophthalmologic Manifestations of Latent Diseases of the Nose and Its Accessory Sinuses. F. R. Packard, Philadelphia.
33 Case of Sarcoma of the Maxillary Gland. F. T. Rogers, Providence, R. I.
34 Indication for Radical Operation on the Nasal Sinuses. N. H. Pierce, Chicago.
35 Unusual Cyst of Larynx. D. C. Greene, Jr., Boston.
36 Calculi of Salivary Ducts. J. S. Gibb, Philadelphia.
37 Rare Case of Nasal Tumor: Fibroma of the Posterior End of the Middle Turbinate. W. C. Braislin, Brooklyn, N. Y.

27. **Surgery of the Labyrinth.**—Richards, in an article accompanied by sixteen colored plates, notes the following facts demonstrating the difficulty attendant on labyrinthine localization: If we remove the arch of the horizontal semicircular canal there may follow vertigo, vomiting, nystagmus and disturbed hearing. The removal of the entire canal system and the vestibule may be followed by the same phenomena. The accidental removal of the stapes may produce vertigo, vomiting, nystagmus, disturbed equilibrium and disturbed hearing. The destruction of portions of the vestibule and cochlea without destruction of the canal system produces the same phenomena. From these facts he draws the following conclusions, which seems to be supported by clinical evidence: 1. If the integrity of the labyrinth is encroached on at any point, the function of hearing, as well as the non-acoustic functions, is seriously interfered with. (If the encroachment has been gradual and there is no apparent disturbance of equilibrium, etc., it is due to compensation.) 2. The disturbances which follow the destruction of a given portion of the labyrinth are not necessarily to be attributed to the loss of the parts destroyed. 3. The destruction of the labyrinth at a given point affects the function of distinct parts as well. If, for instance, we destroy the entire labyrinth, with the exception of the cochlea, or if we merely remove the arch of the horizontal semicircular canals, we are at a loss to know whether to attribute many of the disturbances which follow to the loss of the parts destroyed or to the irritation of the parts remaining. It therefore follows that an attempt at labyrinthine localization based on symptoms will always be subject to the grossest error, and that the attempts to determine the functions of the various departments of the labyrinth by the experimental destruction of these will be subject to the same error.

Interstate Medical Journal, St. Louis.

November.

38 *Medical Men and Their Influence on Human Progress. G. F. Butler, Columbus, Ohio.
39 *Plea for the Cross-eyed Child. J. Green, Jr., St. Louis.
40 *Use and Abuse of Microscope in General Practice. A. E. Taussig, St. Louis.
41 Practice of Medicine and Surgery in the Russo-Japanese War. C. Lynch, U. S. Army.

38.—Abstracted in THE JOURNAL, Nov. 16, 1907, page 1707.

39. **The Cross-Eyed Child.**—Green considers that the cross-eyed child is denied a "square deal." Owing to wrong advice in early years, the child seldom comes to the oculist early enough. The facts that definitely indicate that the muscles are not primarily at fault are: 1. The power of the outward rotation of the squinting eye is perfect or nearly so. 2. A squint frequently disappears during general anesthesia. 3. A high degree of convergence may disappear when the accommodation is paralyzed by atropin, reappearing when the effect of atropin wears off. Green explains the causation of squinting in young children and points out that if educative treatment of the squinting eye is neglected during the early period it will be impossible in the future to bring about a complete restoration of vision. Treatment should be begun as soon as possible when the squint is observed, and there should be no waiting on the supposition that the child will "grow out of it." There are five therapeutic indications: 1, To correct as accurately as possible any refractive error; 2, to occlude the fixing eye, thereby forcing into use the deviating eye; 3, (for the same purpose) to instil atropin into the fixing eye only; 4, to train the fusion sense; 5, operation. The belief that children under 4 or 5 can not wear glasses is erroneous. Green

had under his care at the time of writing an 18-months' child wearing strong plus spherical lenses with entire satisfaction. The accomplishment of a cure implies that the former squinting eye shall have nearly or quite as good vision as the fixing eye, and secondly, that the fusion faculty shall be developed to the maintenance of the highest degree of binocular vision. It is the imperative duty of the physician whose advice is first sought, to point out to the parent the disastrous results of neglect and delay, and to insist strongly that treatment be instituted at once.

40. **The Microscope.**—Taussig balances the relation of laboratory to clinical methods and, while not depreciating the former, insists that the power of careful clinical observation and right judgment in the interpretation of signs and symptoms is of the first importance. Owing to the rarity of the pathognomonic sign, diagnosis is nearly always based on cumulative evidence. Every physician should be as far as possible his own microscopist. Certainly he should be the judge of the diagnostic value of the findings. Even when the examinations demand special training or equipment, and must, therefore, be referred to another, the practitioner should demand of the laboratory worker merely a statement of the actual findings and should reserve their interpretation and the estimation of their diagnostic significance to himself.

Journal of Cutaneous Diseases, New York.

October.

42 *Present Status of Parasitology of Syphilis. O. T. Schultz, Cleveland, Ohio.
43 Tropical Diseases of the Skin. W. Dubreuilh, Bordeaux, France.
44 Peripheral Syphilitic Arteritis. H. G. Klotz, New York.
45 Report of 800 Dermatologic Cases Treated with X-Ray and High-Frequency Currents at the Mount Sinai Hospital. S. Stern, New York.
46 Case of Syphilitic Reinfection—Case of Syphilis Insontium. G. K. Swinburne, New York.
47 Xeroderma Pigmentosum. W. B. Adams, Beirut, Syria.

42. **Parasitology of Syphilis.**—Schultz thus sums up his article: The presence in the various manfestations of syphilis, of a characteristic spiral organism, *Spirochæta pallida*, has been confirmed by the vast majority of those who have busied themselves with the subject. The negative observations thus far reported are of value only in so far as they show the amount of patience and experience required for the finding and the identification of the organism. Comparative study and direct observation lead to the belief that the parasite is protozoan in nature. The finding of *Spirochæta pallida* in a doubtful clinical case is of the greatest diagnostic value to the clinician. Its pressure in pathologic material is of equal importance to the pathologist. Because it has thus far been impossible to obtain and grow the organism in pure culture, Koch's postulates are not susceptible of proof. However, the constant presence of the parasite in the lesions of syphilis, its presence only in syphilis and not in other diseases, its definite relationship to the pathologic changes, its morphologic characteristics, the disappearance more or less *pari passu* of the cutaneous lesions of syphilis and the spirochete after the use of mercury, its presence in the lesions of experimental syphilis of lower animals, furnish sufficient evidence to establish the etiologic relationship of *Spirochæta pallida* to syphilis.

Southern California Practitioner, Los Angeles, Cal.

October.

48 *Two Cases of Half Vision. R. Moore, Los Angeles.
49 Headaches—Their Relation to Gastric Disturbances. W. P. Millspaugh, California.
50 Plague Excitement in San Francisco. J. Choate, San Francisco.
51 Electrotherapy. A. Soiland, Los Angeles.
52 Testing of Gastric Functions. B. Reed, Los Angeles.
53 Value of Antitoxic Sera. E. L. Leonard, Los Angeles.
54 Ptomain Poisoning or Typhoid? Report of Two Cases. W. Hungerford, Gallup, New Mexico.
55 *Treatment of Pneumonia. I. N. Frasse, Los Angeles.

48. **Hemianopia.**—Moore details the mechanism of this condition and its relation to various morbid conditions as causative factors. He states that bilateral homonymous hemianopia may be either organic or functional in origin. If organic it indicates with accuracy the location of the lesion causing it. The possible causative lesions are few and some of them are distinctly amenable to operation. Wernicke's sign—a pupillary contraction when a beam of light is thrown on the blind half of the retina—if further experience proves it to be true, will be of service in separating the cortical or subcortical lesions, which are for the most part amenable to operation, from those affecting the basilar portions of the tract which are practically insusceptible thereof. In most cases the recognition of hemianopia is easy.

55. **Pneumonia.**—According to Frasse, pneumonia is most often due to intestinal absorption which, by lowering tone, allows of lung congestion and inflammation. The further absorption of these toxins is cut short by the sweeping out of the intestinal tract by the best of sterilizers—a mercurial cathartic. If the patient is anemic, he should at once be given 20 or 30 drop doses of tincture of iron, a few hours apart (after the fever has gone down), reducing the dose after a day or two. If the tongue is coated, hydrochloric acid should be added to the iron, so as quickly to re-establish the digestive functions. If the fever has not been taken down by the clearing out of the intestines, ice-bags should be applied to the chest and left on until the temperature goes down to 102 F.; reapplying them if it should go up again. To combat general weakness, strychnin, the best of general tonics, should be used. For special weakness he advises tonics addressed to special organs, such as digitalis for dilated heart. Beefsteak, milk and egg substances; dried-out, well-cooked forms of starch foods, such as crackers (with plenty of good butter) and canned fruits as diluents and laxatives, should be ordered as soon as the fever has pretty well subsided, if the tongue is fairly clean; too many varieties of food should not be given at the same meal. Light articles of nourishment, particularly warmed milk, should be administered during the late and early hours. The pneumonia jacket, in Frasse's opinion, is a relic of barbarism. He believes that from its weakening effects he has seen many cases end fatally, when without it the patient would have had a good chance to recover. Acetphenetidin and other heart depressing, blood degenerating medicines should be omitted. In case of high fever one single dose may occasionally be necessary, as when one fears that apoplexy or a threatening convulsion may take place before the regular treatment can be instituted. Old age, in an otherwise healthy person, in spite of the mortality tables shown in several well-known text-books, should not be a bar to a patient's recovery.

St. Paul Medical Journal, Minneapolis.

October.

56 Milk as Affected by Stable Practices and Subsequent Handling. M. H. Reynolds, St. Paul.
57 Diagnostic Methods. C. P. Robbins, Winona, Minn.
58 Complete Diagnosis. E. Evans, La Crosse, Wis.
59 Diagnosis of Organic Diseases of Stomach. T. W. Stumm, St. Paul.
60 *Syphilis. B. Foster, St. Paul.
61 Sanatorium Treatment of Pulmonary Tuberculosis. H. L. Taylor, St. Paul.

60. **Syphilis.**—Foster cites experiences that lead him to believe that while the statement "once a syphilitic always a syphilitic" may be true, the disease loses its communicability and its inheritability in time and after sufficient treatment. Clinical evidence he regards as often more valuable than bacteriologic. While theoretically syphilis belongs among the notifiable contagious diseases, for practical reasons he is unable to agree with those who would legally include it among them, but he does endorse the general dissemination of knowledge concerning this disease among all classes, and particularly among young men and women.

Journal of the Arkansas Medical Society.

October 15.

62 Case of Cystic Tumor. W. T. Rowland, Arkadelphia.
63 Case of Acute Suppurative Osteomyelitis. J. J. Smith, Paris.
64 *Preventive Medicine. W. Crutcher, Pine Bluff.
65 Specific and Associated Lesions in Chronic Interstitial Nephritis. F. B. Tucker, Chicago.
66 *Empyema Following Pneumonia. E. K. Williams, Arkadelphia.

64. **Preventive Medicine.**—Crutcher urges the importance of the education of the people in matters of private and public hygiene, right living, good cooking, variety of food, proper methods of bathing and attention to the skin, how to obtain potable and safe drinking water, and to avoid the pest of mosquitoes, a knowledge of infection and contagion and of

such preventive measures as vaccination, quarantine, fumigation and disinfection. Above all, he urges education of the public in regard to the care of children.

66. **Empyema Following Pneumonia.**—Williams insists on the importance of watchfulness for empyema following pneumonia, with a view to its recognition, and believes that only by resection of a rib can adequate and permanent drainage be secured. He regards the flushing of the cavity with an antiseptic fluid as the only rational method of procedure.

The Military Surgeon, Carlisle, Pa.

October.

67 Plan for the Expansion of the Army Medical Department in War. F. P. Reynolds, U. S. Army.
68 *Surgical Treatment of Dysentery. H. C. Curl, U. S. Navy.
69 French Impressions of the Medical Service of the Rear in Manchuria. C. S. Butler, Mass. Volunteer Militia.
70 *The Brain a Good Feld for Surgery as Shown by Its Disregard for Traumatism. C. D. Center, Ill. Nat. Guard.
71 **Necator Americanus* in Natives of the Philippines. C. L. Cole, U. S. Army.
72 Cholera Indica or Asiatic Cholera. J. A. Metzger, U. S. Volunteers.
73 Load of the Foot Soldier. H. Mareschal and P. F. Straub, U. S. Army.
74 Tropical Diseases in the Philippines. P. H. Ashburn and C. F. Craig, U. S. A.
75 The Jamestown Ter-Centennial Exposition. W. C. Rucker, U. S. P. H. and M.-H. S.

68. **Dysentery.**—Curl considers that appendicostomy or cecostomy is indicated in intermediate cases in which medical treatment does not result in rapid improvement. Though the prolonged after-treatment is unpleasant the operation itself is simple, has practically no mortality and saves a good many lives.

70. **Brain Surgery.**—Center considers that the cerebrum offers a good field for safe surgery which, when done early and aseptically, will give as brilliant result as those of modern abdominal surgery; and, further, that the deferring of operation for brain injury subjects the patient to unnecessary risks of sepsis.

71.—This article appeared in the *Philippine Journal of Medical Science*, August, 1907, and was abstracted in THE JOURNAL, November 30, page 1874.

Montreal Medical Journal.

October.

76 *President's Address, at Canadian Medical Association. A. McPhedran, Toronto, Ont.
78 *Problems in Connection with the Suprarenals. H. D. Rolleston, London, Eng.
79 *When and How to Resume Normal Feeding in Typhoid Convalescence. J. T. Fotheringham, Toronto, Ont.
80 Rectal Hydrotherapy in Typhoid. G. T. McKeough, Chatham, Ont.
81 Vaselin Oil in Dressing of Mastoid Operation. J. N. Roy, Montreal.
82 Case of Primary Bilateral Mastoiditis. P. G. Goldsmith, Toronto, Ont.

76.—Abstracted in THE JOURNAL, Nov. 30, 1907, page 1860.

78.—Abstracted in THE JOURNAL, Oct. 26, 1907, page 1477.

79. **Resumption of Normal Diet After Typhoid.**—Fotheringham considers the three factors that determine the proper time for the resumption of normal diet after typhoid are the state and behavior of the tongue, of the spleen and of the temperature.

Pennsylvania Medical Journal, Philadelphia.

October.

83 *Possibilities of a Compact Medical Organization. I. C. Gable, York.
84 Public Health, Private Practice. S. Wolfe, Philadelphia.
85 Cecal Hernia of Inguinal Region. J. B. Carnett, Philadelphia.
86 Sympathetic Ophthalmia. E. Stieren, Pittsburg.
87 The Doctor's Wife. H. J. Bell, Dawson.
88 *Case of Chronic Acetanilid Poisoning. C. G. Strickland, Erie.

83.—Abstracted in THE JOURNAL, Nov. 7, 1907, page 1624.

88. **Acetanilid Poisoning.**—Strickland adds a further case of chronic acetanilid poisoning, due in this case to dusting a large ulcer of the leg with the powdered drug.

Alabama Medical Journal, Birmingham.

October.

89 *Bad Results of Neglected Middle Ear Suppuration. W. G. Harrison, Birmingham.
90 Acne. J. H. Edmondson, Birmingham.
91 Should Doctors in the Counties of Alabama Form Mutual Protective Associations? D. L. Wilkinson, Montevallo.
92 Sterility in Women. E. M. Robinson, Birmingham.
93 Toxic Effects of Certain Anilin Derivatives Used in Medical Practice and in Arts with Report of Case of Acute Paranitranilin Poisoning Ending in Recovery. R. M. Goepp, Birmingham.
94 The Menopause. H. E. Mitchell, North Birmingham.
95 Convulsions in Childhood. Z. B. Chamblee, North Birmingham.
96 Diagnosis of Non-tuberculous Joint Troubles. W. T. Berry, Birmingham.
97 Prophylaxis in Disease. Y. L. Abernathy, Hill City, Tenn.
98 President's Address Before Southern Medical Association. H. H. Martin, Savannah, Ga.

89. **Middle-Ear Suppuration.**—According to Harrison, most acute suppurations are probably due to preventable causes, such as adenoids or neglected colds. Acute suppurating ears can generally be cured if promptly and energetically treated; cases resulting from grip, diphtheria, measles and scarlatina are more virulent, but even these will generally respond to treatment. Chronic suppurative otitis media is almost always secondary to the acute condition, and is amenable to antiseptic therapy in most instances; if medical measures fail, surgical intervention will almost certainly save the patient serious complications in after years. Headache, nausea, vertigo, fever, somnolence, tremor and disturbed vision occurring in one with chronic ear disease are always alarming symptoms, and are usually an urgent demand for surgical relief.

Atlanta Journal-Record of Medicine.

October.

99 Treatment of Puerperal Infection. G. H. Noble, Atlanta.
100 Alcoholism and Tuberculosis. L. C. Rouglin, Atlanta.
101 Intelligence of Action. C. A. F. Lindorme, Atlanta.
102 *Operation for Hemorrhoids Practically Painless and Bloodless. R. R. Kime, Atlanta.
103 Leptandrin. J. Burke, Manitowoc, Wis.
104 Surgical Dressings and Care of Wounds. J. H. Johns, Atlanta.

102. **Hemorrhoids.**—Kime recommends the following operation: After the usual preparation, dilate the sphincter well and carry a strip of gauze with thread attached above the field of operation so as to protect the parts from any discharge. Each hemorrhoid is removed separately, care being taken not to remove too much tissue. The tumor is grasped with an artery forceps and pulled well down into view. If necessary, a second forceps or double tenaculum may be applied. A plain No. 2 catgut in a round-point curved needle is inserted at the upper end of the pile and the suture carried around and under its beginning and tied. A second stitch may be taken with the suture so as better to control the hemorrhage before beginning to remove the tumor. Then with a curved scissors he begins to cut at the upper part of the pile just below the suture to remove it. He follows up the cutting closely with the suture, so that by the time the hemorrhoid is removed the wound is almost completely closed, and only one or two stitches further are required to complete the work. There should be practically no loss of blood in this operation.

Journal Missouri State Medical Association, St. Louis.

October.

105 *Cystic Degeneration of Ovaries as a Cause of Dysmenorrhea. W. B. Dorsett, St. Louis.
106 *Surgical Treatment of Glaucoma. J. M. Ball, St. Louis.
107 Treatment of Lobar Pneumonia. O. H. Brown, Mount Vernon, Mo.
108 *Posture in Labor. W. B. Deffenbaugh, St. Joseph.
109 Injuries of Joints. W. A. Shelton, Kansas City.
110 Chronic Suppurative Otitis Media. G. E. Gwinn, Springfield.
111 Surgical Treatment of Diseases of Gall Bladder and Its Ducts. J. D. Guyot, Jefferson City.

105. **Dysmenorrhea.**—The purpose of Dorsett's paper is to draw attention to cystic degeneration and cirrhosis of the ovary as a frequent cause of dysmenorrhea that can not be remedied by topical applications and tonics. Resort to such measures is likely to result in addiction to anodynes. The better plan is to slit the ovary down to the hilum and remove the edges of the incision with scissors, going to the full depth of the cyst, or to scrape it out with the sharp curette or knife-blade. The organ can even be cut away to the hilum and enough yet be left to functionate.

106. **Glaucoma.**—Ball's paper deals only with idiopathic glaucoma, which he considers in relation to iridectomy, Hancock's operation, and sclerotomy. Iridectomy is of less value

in glaucoma simplex than in the inflammatory types. He has long regarded the prolonged use of miotics as loss of valuable time, and has performed iridectomy in practically all cases of glaucoma simplex for many years, with the retention of useful vision in 60 per cent., the operation should always be done under a general anesthetic. The teratome being introduced from 1 to 2 c.c. behind the corneal scleral junction. In his experience the size of the piece removed, on which so much stress is often laid, is of much less importance than the site of the incision. Ball is satisfied that Hancock's operation has a distinct place in the treatment of glaucoma. In absolute glaucoma the removal of the eye may be avoided in many cases by this operation. Ball's experience with sclerotomy has not been favorable. Eight years' experience leads him to class sympathectomy among the last resorts. It is immediately followed by remarkable improvement in vision, but the improvement does not last. Owing to the intercommunication of the sympathetic ganglia through the ganglion of Ribes, it is necessary to remove both superior cervical ganglia to obtain the best results. The operation is of more value in glaucoma simplex than in other forms.

108. **Posture in Labor.**—Deffenbaugh summarizes the indications for posture in labor as follows: 1. In the average case the woman will do well in any posture. 2. In tardy labors, due to inefficient uterine contractions, the woman will do best who most nearly assumes the upright posture. 3. In precipitate labors the converse is true, and the elevation of the hips with the patient on her side, is the best posture. 4. In impactation that position which by gravity helps to overcome the condition and lessens the field of operation, the abdomen relapsed and in the best attitude for bimanual work, is best, and for this we have the modified Trendelenburg posture. 5. When engagement does not take place, and yet the disproportion between the presenting part and the diameter of the superior strait is not too great, we would have recourse to the hanging or Walcher posture. 6. When from a relative disproportion between the size of the presenting part and the vulvar outlet, or when on account of the rigidity of the perineum we fear a tear, we should recommend an extended or modified Walcher posture.

American Journal of Surgery, New York.

October.

112 *Causes of Low Percentages of Cures in Operations for Fistula in Ano. J. R. Pennington, Chicago.
113 Practical Points Concerning Certain Joint Injuries and Diseases. M. A. Austin, Anderson, Ind.
114 *Gastric and Pyloric Adhesions. A. W. Abbott, Minneapolis.
115 Radical Cure of Inguinal Hernia. A. R. Allen, Carlisle, Pa.
116 *Femoral Hernia: Plea for Early Radical Operation. R. Elmergreen, Milwaukee, Wis.
117 Surgical Postures. M. W. Ware, New York.
118 Blood Examination in Surgical Diagnosis. Practical Study of Its Scope and Technic. I. S. Wile, New York.

112.—This article appeared in substance in THE JOURNAL, May 18, 1907, page 1674.

114.—This article was published in the *St. Paul Medical Journal*, March, 1907, and was abstracted in THE JOURNAL, April 20, 1907, page 1381.

116. **Femoral Hernia.**—Elmergreen recommends operation in all cases of hernia, unless there are special contraindications, and gives some of the practical, familiar points that should be emphasized in the technic.

Vermont Medical Monthly, Burlington.

October.

119 Surgery of the Rectum. D. C. Howley, Burlington.
120 Four Cases of Toxemia Complicating Pregnancy Resulting in Pulmonary Edema and Death. S. W. Hammond, Rutland.
121 When Will the Profession Awaken? C. C. Miller, Chicago.
122 *Drug Eruptions. G. G. Campbell, Montreal.
123 Technic of Operative Treatment of Hemorrhoids Under Local Anesthesia. T. C. Hill, Boston.

122. **Drug Eruptions.**—Campbell reviews alphabetically a number of commonly used drugs that produce eruptions and classifies the eruption-producing drugs into those of morbilliform type and those of scarlatiniform type as follows: Morbilliform type—antipyrin, antitoxin, belladonna, copaiba and cubebs, opium, sulphonal, tar and turpentine. Scarlatiniform—antipyrin, antitoxin, belladonna, chloral, copaiba, and cubebs, quinin, sulphonal, salicylates and turpentine.

University of Pennsylvania Medical Bulletin, Philadelphia.

October.

124 Surgical Conditions Arising from Branchial Clefts, with Report of Case of Branchiogenic Carcinoma. J. Speese, Philadelphia.
126 Case of Mixed-Cell Leukemia. W. W. Cadbury, and W. T. Cummins, Philadelphia.
127 Regeneration of Bone. H. S. Wieder, Philadelphia.

Columbus Medical Journal.

October.

128 Suggestion. C. D. Mills, Marysville, Ohio.
129 Treatment of Scarlet Fever. C. E. Evans, Newark, Ohio.

Buffalo Medical Journal.

November.

130 Medicine a Science—Education—The Correlation of Diseases. A. A. Jones, Buffalo.
131 Causes and Treatment of Lateral Curvature of the Spine. P. LeBreton, Buffalo.

Yale Medical Journal, New Haven, Conn.

November.

132 Science and Art of Medicine in Some of Their Aspects. F. C. Shattuck, Boston.
133 Value of Differential Leucocyte Count in Acute Surgical Cases. C. O. Cooke, Providence, R. I.
134 Hospital Floors. C. J. Fox, Washington.

Northwest Medicine, Seattle.

November.

135 Work of State Medical Examining Board. C. W. Sharples, Seattle.
136 *Etiology of Acute Rheumatism. J. C. Davies, Boise, Idaho.
137 Medical Profession vs. the Plague. J. R. Yocom, Tacoma, Wash.

136.—Abstracted in THE JOURNAL, Nov. 23, 1907, page 1798.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

November 9.

1 *The Pleuræ; Pleural Effusion and Its Treatment. Sir James Barr.
2 *Cerebrospinal Meningitis Complicated by Parturition. J. D. Williamson.
3 Origin of the Facial Nerve. N. B. Harman.
4 *Subcutaneous Injections of Air as Means of Relieving Certain Painful Manifestations. A. S. Gubb.
5 *Pernicious Anemia and Allied Conditions. W. Hunter.
6 *Anemia in Ankylostomiasis. A. E. Boycott.
7 Hemoflagellates. E. A. Minchin.
8 *Treatment of Blackwater Fever. W. T. Prout.
9 Cell Changes in Dourine and Sleeping Sickness. F. W. Mott and H. G. Stewart.
10 Peculiar Blood Condition, Probably Parasitic, in Sudanese Fowls. A. Balfour.
11 Development of Piroplasma Canis in the Tick. S. R. Christophers.
12 Bilharzia (Schistosomum) Disease in Cyprus. C. A. Williamson.
13 South African Diseases. C. Birt.
14 Mediterranean Fever in South Africa. C. Birt.
15 Complications Found in Chronic Cases of Sprue. C. Begg.
16 Climate of Ceylon. W. H. de Silva.
17 Anatomic Studies of the Rectum and Sigmoid Flexure in Relation to the Causes and Treatment of Mucus in the Stools, Associated with Intestinal Flux. J. Cantlie.
18 One Hundred Cases of Liver Abscess. J. Cantlie.

1. **The Pleuræ.**—Barr first goes deeply into the physics of pleural pressure and its relation to pleural effusion. Every case of pleurisy he supposes to be due to microorganisms or their toxins. He says that cases of dry pleurisy require very little treatment, except some counterirritation and diaphoretics, a purgative, and perhaps a sedative to relieve pain, or strapping of the chest to limit the amount of movement. The important question when to withdraw serum is considered at length. The effusion is a natural process, which, if it continues until after the inflammation has subsided, lessens the risk of pleuritic adhesions and keeps the collapsed lung quiet, a desirable thing in active tuberculosis. The danger of increasing negative pressure to too great an extent, however, which has hitherto accompanied complete withdrawal of effusion, can be obviated by the introduction of air. Barr now recommends the complete withdrawal of the effusion in all cases, but before any great negative pressure is established and before the patient feels any discomfort he stops the siphon and introduces a quantity of air equal to the amount of fluid withdrawn. When all the liquid is withdrawn he injects 4 c.c. of 1-1,000 adrenalin solution diluted with 8 or 10 c.c. of sterile normal saline solu-

tion, and, if necessary, more sterile air, so as to make the amount equal to one-half or one-fourth of the bulk of the air withdrawn. The largest amount of air is introduced in tuberculous cases. By this combined method of air introduction and the use of adrenalin it is possible to operate early in any case, even during the febrile stage, and under no circumstances should the fluid be allowed to accumulate to such an extent as completely to collapse the lung. Tapping should be resorted to before the patient suffers any respiratory distress. He recommends, so far as possible, the elimination of salt from the diet, especially in cases of serofibrinous pleurisy, on account of its high osmotic equivalent. When there is a large quantity of effused fibrin, such as occurs in pneumococcus pleurisy, decalcifying agents, such as lemons, citric acid or the citrates of ammonium, potassium and sodium, may be used; preferably, however, he reserves these until the acute stage of the accompanying pneumonia has passed. In regard to empyema, Barr criticises surgical methods, for, he says, notwithstanding that the surgeons have taken this disease under their special care, they have done nothing to advance its treatment. He describes his idea of the ideal surgical treatment in such cases, and considers that efforts must be made to place the treatment of this disease on a basis more scientific than that on which it at present stands.

2. **Cerebrospinal Meningitis in Parturition.**—Williamson reports the case of a young girl, aged 13 years and 9 months, who was admitted into a hospital in labor. She was suddenly attacked with the severe symptoms of cerebrospinal meningitis and died in a few hours.

4. **Subcutaneous Injections of Air.**—Gubb describes the method of subcutaneous injections of air for the relief of pain, originated by Cordier of Lyons. The procedure is applicable to pain from all forms of neuralgia and neuritis, the quantity of air being dependent on the anatomic structure of the part. So far no mishap has attended this mode of treatment, although it has been practiced many thousand times.

5. **Pernicious Anemia.**—Hunter describes a most elaborate investigation into the nature of progressive pernicious anemia (Addison's). He concludes that Addison's anemia is not merely a special form of anemia, but a definite specific homolytic infective disease. The anemia is not the sole feature of the disease; there are at least three other groups of symptoms, hemolytic, gastrointestinal and toxic, caused not by the anemia itself, but by the infective agencies underlying the disease and having in common the marked feature of periodicity. He entirely discards Biermer's view that all ordinary causes of anemia, if severe enough, are potential causes of this disease. Its characteristics are, a history of antecedent oral, gastric or intestinal trouble, associated with sepsis, extending over many years, more or less suddenly followed by rapidly developing anemia, marked by hemolysis; a history of sore tongue (infective glossitis) frequently clearly connected with exposure to drain poison. Great significance and importance is attached to one of the commonest and most overlooked forms of infection in the body—oral sepsis. The following are the characteristics of the specific disease: The extraordinary, severe and pernicious character of the blood destruction—hemolysis; the no less striking powers of recovery; the periodicity; the presence, in addition to the anemia, of glossitic, gastric and intestinal symptoms and febrile and nervous disturbances, and an extreme proneness to relapse. The line of treatment aimed at, in addition to the ordinary measures of blood tonics and diet, consists of: 1. The complete removal by local antiseptic measures in the case of the mouth, and by use of internal antiseptics in the case of the stomach and the intestines, of the oral, gastric and intestinal sepsis associated with the disease. 2. Special local antiseptic treatment of the local glossitis, supplemented by measures for raising the antitoxic power of the blood by serum treatment. [It is impossible in an abstract to give any adequate conception of this important article, with the equally important discussion that follows it.]

6. **Anemia in Ankylostomiasis.**—Boycott insists on the abundant points of distinction between the anemia of ankylostomiasis, which can be called pernicious only in a very general sense, and that of true idiopathic progressive pernicious anemia. He points out that there are concerned in the production of the disease two nematodes, *Ankylostoma duodenale* and *A. americanum*, which are zoologically clearly different specifically, and to some extent even generically. He also states that only a small number of those infected with ankylostomiasis suffer from anemia; these healthy carriers, however, are in a true state of specific infection. In general, the degree of anemia is in proportion to the number of worms present. The distinction between this anemia and idiopathic pernicious anemia is clear. In pernicious anemia and anemia from hemorrhage there is a real deficiency of hemoglobin, while in ankylostomiasis and chlorosis there is practically nothing except a great dilution of blood and an alteration in the hemoglobin contents of the individual red cells. The mechanism of the production of this anemia is obscure.

8. **Blackwater Fever.**—Prout describes the course of this disease, dividing it into two types, the severe and the mild. He discusses the diagnosis and prognosis, and in regard to the etiology insists that it is primarily a blood change and that its consideration as an affection of the kidneys is based on totally wrong pathology. Repeated attacks of malaria result in lowered vitality of the red blood cells weakening the connection between the hemoglobin and the stroma, until some exciting cause produces a sudden hemolysis with the phenomena of blackwater fever. The exciting cause is sometimes quinin, in others chill, and in yet others the absorption of toxins from the intestinal canal. The dissolved hemoglobin circulating in the blood acts as an irritant. The indications for treatment are: 1. To get rid of the morbid products through the various excretory organs. The intestinal canal must be emptied, and for this the author prefers calomel, and gives from 5 to 10 grains at the commencement of the attack as a routine practice. Elimination by the skin and kidneys must be aided by diaphoretics and diuretics, of which Prout recommends the old diaphoretic mixture of solution of acetate of ammonia with spirit of nitrous ether and potassium acetate or nitrate. Digitalis may be added to the nutrient enemata to aid in diuresis. Intravenous injection of normal saline solution may be necessary. 2. Counteract the malarial element. If malarial parasites are found in the circulation, one dose of quinin may be given, but its effect must be watched, and on the recurrence of hemoglobinuria it should not be repeated. He prefers the hypodermic method, using the neutral hydrochlorid, from 5 to 8 grains. 3. Support the strength. 4. Alleviate all distressing symptoms; above all, keep up the patient's spirits and do not let him become demoralized. Prout does not see any reason why those who have had a single attack of blackwater fever and have completely recovered from it should not return to a district where the disease prevails; nor is there any reason, he says, why an insurance society should not accept such a life at ordinary risks.

Lancet, London.

November 9.

19 *The Pleuræ; Pleural Effusion and Its Treatment. Sir James Barr.
20 *Advances of Modern Medicine. Sir R. D. Powell.
21 *Fleas as a National Danger. Sir Lauder Brunton.
22 *Advances in Medicine During the Past Thirty Years. J. K. Fowler.
23 *Analysis of the Mental Process in Criminal Acts. T. C. Shaw.
24 Chronic Intestinal Obstruction Due to Adhesion of Uterine Fibroid to the Mesentery. A. H. G. Doran.
25 *Cancer Infection and Cancer Recurrence; A Danger to Avoid in Cancer Operations. C. Ryall.
26 Vernal Catarrh. T. H. Butler.
27 Clinical Observations on Origin of Fever. A. Lorand.
28 Four Cases of Tuberculosis of the Temporal Bone. C. E. West.

19.—See abstract No. 1.

20. **Advances of Modern Medicine.**—Powell's address is in some sort a reply to the lamentations uttered over the backwardness of medicine as compared with the progress of surgery in recent times. He deals with the treatment of tuberculosis, the employment of bacterial vaccines, the development of protozoology, the effects of establishing collateral circulation and relieving vascular tension in modern medicine, the increased diagnostic power of the physician as an aid to the surgeon, and the bearing of recent anatomic researches on the heart.

21. **Fleas as a National Danger.**—Brunton first considers the subject of malaria as traced by himself in his own case and

proceeds by way of the mosquito and tsetse fly to the subject of fleas, as being the agents in the transmission of bubonic plague. He describes the experiments connecting transmission of plague with the rat flea and points out that the virulence of the plague poison is capable of increase and decrease, so that at first too feeble to attack man, it gains in virulence by passage through rats, from which it is transmitted to man by fleas. He points out the danger to communities arising from the escape of rats along ropes to the shore from vessels containing isolated cases of plague, and through the medium of the rat and flea infected districts in large cities, starting again epidemics such as have occurred in the past. He urges the endowment of chairs of pathologic entomology.

22. **Advances in Medicine.**—Fowler's address, like Powell's (Abstract No. 20), is a striking presentment of the vast advances made by medicine in every direction during the past thirty years. He concludes that having regard to the wide field which it covers, the advance of medicine during the last thirty years has been infinitely greater in the mass than that of surgery, although not perhaps so readily appreciable by the public. Of the future we need have no fear, he thinks, for it will far outstrip the past.

23. **The Mental Process in Criminal Acts.**—Shaw contends that in criminal acts the mental process introduces no fresh element. If in the insane a criminal act occur, the only fresh element is the false motive, which, however, acts in the same way as does a normal one. The constituents of the voluntary process are the same in kind as in normal minds: Motive, desire, feeling, end in view, action on presentation (otherwise impulse), action on reflection—all may occur in the same way as in normal thought processes. The only difference is not in the mechanism of the elements, but in their nature; thus the motive may be a wrong one (i. e., against the accepted obligations of society), or the element of feeling may be an irregular one due to structural conditions, but we must remember that just as social systems are temporary—are themselves in a mutable condition—so are mental processes. We have not in the one the perfection of organization, though such as it is it acts in accordance with its construction; neither have we in the other any but a temporary adaptation, though such as it is it acts in the way we should expect it to act, and in this expectation we are rarely disappointed.

25. **Cancer Infection and Cancer Recurrence.**—Ryall reports a series of cases which lead him to the conclusion that when once an individual becomes the subject of cancer, there is not only the liability of its spreading by well-defined infective process, but also in those cases in which the surgeon attempts to remove the disease there is risk of reinfecting the patient from the growth which he is endeavoring to remove. In proof of this position, Ryall points to the clinical evidence of the intra-abdominal spread of carcinoma, combined with the post-operative history of patients—diffuse infection of the wound, nodular infection following carcinoma of the large intestine and uterus, and needle-hole infection following tapping.

British Journal of Children's Diseases, London.

October.

29 *Nephritis in Infants. G. Carpenter.
30 *Problem of the Deaf School Child. M. Yearsley.
31 Simulation of Some Symptoms of Primary Amaurotic Idiocy by a Tumor of the Interpeduncular Space. E. C. Williams.
32 *Boric Acid Rash in a Child. J. Allan.
33 *Bilharzia in a Boy of Eleven. H. Skelding.

29. **Nephritis in Infants.**—Carpenter goes exhaustively into the literature of this subject, and as a consequence of this study, and of his own clinical experiences, states that there can be no doubt but that cases of nephritis do occur from time to time in the youngest infants, and with the usual objective signs of that complaint. It is also probable that in some the disease starts in intrauterine life. A number of instances are reported leading to the conclusion that the reason that infantile nephritis escapes recognition so often is that not only is it difficult of clinical recognition but it is a peculiarity of infantile nephritic kidneys—whether of syphilitic or simple origin—that they frequently appear to the naked eye to be healthy, even when they are extensively diseased. Carpenter concludes that it would appear, in the present state of our knowledge, that interstitial nephritis may be produced by toxins other than those of congenital syphilis. This is of interest from two points of view, viz.: 1, The suggestion which has been made that the cirrhotic kidney is a syphilitic manifestation; 2, the possibility of the seeds of this disorder being sown in infantile life, and of the cirrhotic kidney being produced by intestinal toxins.

30. **The Deaf School Child.**—Yearsley says that we are all agreed that appropriate education in special schools is needed for those who combine deaf mutism with mental deficiency; but, he asks, what are we to do in the case of those children in the normal state schools who are sufficiently deaf to be prevented from gaining all the advantage possible from the class teaching, and especially with those who by reason of middle-ear suppuration are not only losing advantages but incurring actual danger to life. He quotes the statistics given him by the medical officer for education to show the great prevalence of this condition, and points out that the chief obstacle in dealing with it is parental ignorance and indifference. Mental incapacity and inattention are often charged with what are really the results of this condition. Three methods of meeting the difficulty suggest themselves: 1, Special legislation; 2, special lectures for parents; 3, special officers to deal with neglectful parents. The first he regretfully admits to be impracticable in the present state of affairs. The second would undoubtedly do good to those who attended the lectures, but unfortunately they would hardly be the class that it is most necessary for the lectures to reach. He suggests, therefore, the third, the appointment of a special otologist to examine all children referred to him by the visiting medical officers of the schools. His report should be communicated to the parents; a certain number would be grateful and would take steps to have the condition attended to. Those who neglected should be requested to interview the authorities, who should point out to them the serious nature of the case. This would possibly reach a few more. Those who neglected these two opportunities should be sought out by specially appointed visitors, who should endeavor to persuade them, which course would save yet a few more. That is as far as the matter could go without special legislation. The teaching of hygiene in the schools is a slow process and it will be some generations before it can bear fruit.

32. **Boric Acid Rash.**—Allan points out that boric acid internally is likely to produce toxic symptoms, and certain people can not stand it at all. Some individuals can take the drug in large doses without ill effects. In others, gastrointestinal irritation with diarrhea and vomiting speedily manifest themselves, and sometimes a rash is present. He reports a case in which a rash appeared, closely resembling that of German measles.

33. **Bilharzia in a Boy.**—Skelding reports a case of bilharzia in a boy aged 11, who improved under a régime forbidding exercise, so far as practicable, games, and everything liable to fatigue. A light simple diet, as for mild cystitis, was also ordered. Skelding considers it rational to treat the symptoms as for mild cystitis, and to try to prevent the sequelæ of such a condition, namely, calculus and nephritis.

Medical Press and Circular, London.

November 6.

34 Traumatic Epilepsy Treated by Operation. T. Sinclair.
35 *The Pleura; Pleural Effusion and Its Treatment. J. Barr.
36 Death from Hemorrhage from a Medicolegal Point of View. Hendrick.

35.—See abstract No. 1.

Journal of Tropical Medicine and Hygiene, London.

October 15.

37 Port Soudan: Its Climate and Sanitation. E. S. Crispin.
38 Epidemic of Enteric Fever in the Angola Highlands and Liver Abscess in Angola. F. C. Wellman.
39 Etiology of Beriberi. W. Hunter and W. V. M. Koch.
40 Effect of Regulated Muscular Exercise on Sugar Elimination in Diabetes. I. M. Mallick.

Clinical Journal, London.

October 23.

41 Subacute Combined Degeneration of the Spinal Cord. J. S. R. Russell.
42 Leprosy. F. M. Sandwith.

November 6.

43 Angina Pectoris. G. Rankin.
44 Etiology, Symptoms and Treatment of Liver Abscesses. H. Curtis.

Presse Médicale, Paris.

October 19, XV, No. 85, pp. 681-688.

46 *Acute Secondary Syphilitic Meningitis. (Méningite précoce, préroséolique.) L. Boidin and P. Weil.

October 23, No. 86, pp. 689-697.

47 *Early Signs of Arteriosclerosis. (Les petits signes de l'artériosclérose.) O. Josué.
48 Exploratory Puncture of Solid Tumors. (La ponction exploratrice des tumeurs solides.) T. Tuffier and A. Mauté.

October 26, No. 87, pp. 697-704.

49 Action of Gastric Juice on Starch. H. Roger and L. G. Simon.

October 30, No. 88, pp. 705-713.

50 Typhoid Fever and Descending Infection of the Biliary Passages. A. Lemierre and P. Abrami.

November 2, No. 89, pp. 713-720.

51 *Pathogenesis of Recurring Epididymitis and Its Treatment P. Bazy.
52 *Special Points in Cutaneous Reaction to Tuberculin. (Cutiréaction à la tuberculine.) J. Lemaire.

46. **An Acute Secondary Syphilitic Meningitis.**—Drouet was able to collect eight cases in 1905 and Boidin and Weil here relate the history of another case. The patient was a young man brought to the hospital with typical acute meningitis, although the temperature was only a little above normal. A tuberculous process was suspected, but the discovery of an indurated chancre on the penis and of moderate lymphocytosis in the cerebrospinal fluid suggested syphilis, and mercurial treatment soon cured the patient. The chronology of the case proved to be: Chancre; six weeks later, headache; three weeks later, meningitic symptoms; a week later, roseola, followed in another week by recovery from the meningitis. Meningitis seldom develops as early as this in syphilis; in most cases it occurs during the tertiary phase. The immediate prognosis seems to be good, but it is a question whether or not a nervous system attacked thus intensely at the outset will have to suffer severely later. In one of the reported cases the patient succumbed to serious lesions of the nerve centers a few months after recovery from the acute meningitis.

47. **Signs of Incipient Arteriosclerosis.**—Josué presents a list of early signs of arteriosclerosis which allow its differentiation in its incipiency, while there is still a prospect of arresting its progress by appropriate measures. The symptoms are the result of slight and variable disturbances in the local circulation. The arteries are less elastic, contracting less readily, and the course of the blood is not normally regulated. In some cases these symptoms appear only after effort. There may be general disturbances; the patient tires more easily, and is weary and depressed, with intolerance occasionally of alcohol or tobacco. Vasomotor, nervous, respiratory, ocular or auditory disturbances are also common, with epistaxis, edema, arterial hypertension or heart and kidney symptoms. Among the nervous troubles may be a lessened aptitude for physical and mental work, disinclination to commence a new task, transient loss of memory or a slight, transient difficulty in speech. The patients sometimes display unusual irritability or somnolency. Headache is a frequent early sign, especially morning heaviness and oppression in the head, becoming actual headache in the course of the day, sometimes pulsating. The pain is generally located high on both sides. The pain sometimes comes on or is aggravated by mental or physical effort or ingestion of alcohol. The mere fact of concentrating the attention is sometimes enough to arouse the pain. He calls this symptom "the sign of the painful thought." Continuous headache persisting after correction of refraction errors is probably due to atheroma or arteriosclerosis. The patients sometimes complain also of a transient tingling or heaviness in the arms or legs. Intense and persisting neuralgia is not infrequent, intercostal, trigeminal or in the legs, but the pain does not follow the course of the nerves, and there are occasional intermissions. Sometimes the pain alternates with tingling or itching in the limbs; it is not modified by pressure, and there are no other sensory disturbances in the regions involved. Vertigo is one of the warning symptoms of arteriosclerosis. Sometimes the patient feels dizzy when he stands up after reclining, or there may be a vague impression that the floor is not solid. Sometimes he feels as if something were moving in his brain. All other affections that might induce vertigo must of course be excluded. The patient generally finds it impossible to go to sleep, and after tossing restlessly for hours sleeps tardily and brief, his slumber being restless and interrupted by subdelirium. When neurasthenia is observed in a previously healthy person between 45 and 50 years old, and no other cause can be assigned for it, incipient arteriosclerosis should be suspected. This tardy neurasthenia frequently accompanies cancer, tuberculosis, diabetes and incipient general paralysis, as well as incipient arteriosclerosis. The neurasthenia is generally of a mild form, and the arteriosclerotic lesions are more functional than organic in this early stage. Another early sign of arteriosclerosis is the exceptionally slow return to normal after a traumatism. Spasmodic phenomena in the arteries of the retina are also among the signs of incipient arteriosclerosis, as also thrombosis of the central artery, atrophy of the macula and central scotoma or circumscribed atrophy of the optic nerve. Slight dyspnea on effort is an important sign, as also spasmodic severe dyspnea, which generally follows errors in diet. As a rule, such patients have emphysema. Epistaxis is another important early sign; it is best not to check it unless the hemorrhage is excessive, as it is a valuable safety valve for high arterial tension. Slight edema of the legs, especially toward evening, is another sign. The blood pressure is not always high during the early stages of arteriosclerosis, but when it is, and the high pressure persists, arteriosclerosis and atheroma should be surmised, especially when combined with some of the other signs mentioned above. The presence of kidney disease does not testify against arteriosclerosis, and it may even be the cause of the latter. In one of his cases a young woman had a mild kidney involvement during an attack of scarlet fever. There was slight albuminuria, a little edema of the eyelids and a gallop rhythm. These symptoms lasted only a week, but the radial arteries soon became hard to the touch and can now be rolled under the finger. There is no other sign of atheroma, but it is unquestionable that the changes in the kidney have left their impress on the arterial system.

51. **Recurring Epididymitis.**—Bazy has observed two cases in which epididymitis recurred frequently after prostatectomy. The prostate had been removed by the perineal route in one and by the transvesical route in the other. The epididymitis was probably the flaring up of some latent focus of infection, caused by lessening of the resisting forces of the organism from some cause. His cases and others in the literature demonstrate that resection of the vasa deferentia does not prevent the recurrence of epididymitis in individuals with enlarged prostate or dependent on the catheter or after prostatectomy.

52. **Cutaneous Reaction to Tuberculin.**—Lemaire noticed revival of anterior cutaneous and ocular reactions after a subcutaneous injection of tuberculin. In some patients the second cutaneous reaction was more marked than the first after the interposed subcutaneous injection of tuberculin. A general reaction from the cutaneous test was rarely observed. His experience included tests on 144 children.

Semaine Médicale, Paris.

November 6, XXVII, No. 45, pp. 529-540.

53 *Operative Treatment of Emphysema and Incipient Apical Tuberculosis. (Opération de Freund dans l'emphysème pulmonaire.) F. Lejars.

53. **Operative Treatment of Apical Tuberculosis and Emphysema.**—Lejars discusses Freund's theory in regard to the injurious influence exerted on the lung by a rigid and malformed chest wall, and the possibilities of remedying incipient disease and emphysema by resecting a portion of the wall. He presents the subject as one of vital interest and importance, especially for the relief of emphysema. The best results will be obtained in the early stages, while the respiration is not appreciably interfered with during repose, but dyspnea comes on at the slightest effort, and the *x*-rays show the immobility of the chest wall during deep breathing, the lowering and tension of the diaphragm and the irregular thickening and abnormal shape of the upper costal cartilages. See abstract 137.

Archiv für Verdauungs-Krankheiten, Berlin.

XIII, No. 5, pp. 463-576.

54 Abdominal Pain, Especially that Due to Intestinal Obstruction. (Schmerzen im Bauch.) K. G. Lennander.
55 Bead Test for Functional Investigation of Digestive Apparatus. (Perlenprobe zur Funktionsprüfung des Verdauungsapparates.) M. Einhorn.
56 *Chronic Pancreatitis. K. Walko.
57 Proportion of Hydrochloric Acid in Physiologic Gastric Juice of the Japanese. (Salzsäuremenge im physiologischen Magensaft der Japaner.) G. Yukawa.
58 Hyperacidity of the Japanese. Id.

56. **Chronic Pancreatitis.**—Walko's article is based on sixteen cases of chronic pancreatitis, most of which are described in detail with discussion of differentiating points. In treatment, the favorable influence of simple laparotomy is emphasized. The benefit is probably the result of the active hyperemia, the drainage, removing the toxic products of the destructive process, etc. In chronic pancreatitis, recovery has repeatedly occurred after a laparotomy. Drainage of the biliary passages in case of gallstones has a favorable indirect influence on chronic pancreatitis. Good results are more certain when the process is in an early stage than with cachexia, cholemia, etc.

Beiträge zur Geb. und Gynäkologie, Hegar's, Leipsic.

XI, No. 1, pp. 1-178.

59 Relations Between Size of Fetus and of Birth Canal and the Mechanism of Childbirth. (Geburtsmechanik.) H. Sellheim.
60 What Injuries of the Vascular and Nervous Apparatus Can the Bladder Endure without Permanent Damage? (Welche schädigungen verträgt die Blase ohne dauernden Nachtheil?) O. Roith.
61 Congenital and Acquired Malformations of Fallopian Tube. (Missbildungen der Tuba.) G. Schickele.

No. 2, pp. 179-356.

62 Congenital Torticollis. (Caput obstipum.) F. A. Kehrer.
63 The Walcher Position to Facilitate Childbirth. (Erleichterung der Geburt durch die Hängelage.) H. Sellheim.
64 Torsion of Pedicle of Parovarian Cysts. (Stieldrehung von Parovarialcysten.)
65 *Spontaneous Rupture of Symphysis Pubis During Delivery. A. Mayer.
66 Embedding of Ovum in Rudimentary Accessory Cornu of Uterus. (Einplantation im rudimentären Nebenhorn des Uterus.) A. Fuchs.
67 *Childbirth After Previous Pelvis-enlarging Operation. (Geburten nach früheren beckenerweiternden Operationen.) K. Baisch.
68 Ovarian Tubular Adenoma. (Adenoma tubulare ovarii—testiculare.) G. Schickele.
69 Treatment of Retention of Fetal Membranes. (Eihautretention.) T. Schneider Geiger.
70 *Simultaneous Occurrence of Malignant Tumors in Ovary and Stomach. (Gleichzeitiges Vorkommen von malignen Ovarialtumoren und Magenkarzinom.) E. Engelhorn.
71 Subcutaneous Emphysema in Parturients. M. Neu.
72 Ovarian Pregnancy with Hematocele. G. Schickele.
73 Differentiation of Streptococci from Lochia in Normal and Febrile Puerperium. (Vergleichende Untersuchungen zur Unterscheidung von Streptokokken aus Uteruslochien normaler und fiebernder Wöchnerinnen.) A. Scheib.

65. **Rupture of Symphysis After Delivery.**—The patient in the case reported was a previously healthy young primipara, at term with a normal pregnancy. The conditions seemed to be unusually favorable except that the amniotic sac ruptured tardily. Ahlfeld has reported a case of separation of the symphysis during spontaneous delivery of an unopened ovum. The rupture of the symphysis may occur without symptoms at first. Mayer discusses the subject from different standpoints, emphasizing the fact that the coexistence of puerperal suppurative processes suggests the possibility of preceding suppuration in the symphysis, favoring spontaneous rupture. The discovery of rupture of the symphysis or the fact that it was not discovered by the physician should not be regarded as negligence on his part. It is not absolutely necessary to suture such a rupture, and omission to suture is not evidence of negligence. In the case reported, the rupture occurred in the night after apparently normal delivery. A sudden sharp pain in the region of the symphysis was followed by inability to move the legs. The temperature rose the next day, and streptococci were found in the lochia and in the blood, and later in pus from an abscess behind the symphysis. With a pelvis supporter the legs could be moved, and gradually the symphysis healed, although convalescence was delayed by an infectious sore throat, thrombosis of the femoral vein, and purulent right pleurisy. The patient was dismissed in good health in the eighth week with no disturbances in gait.

67. **Deliveries After Previous Pelvis-Enlarging Operations.**—Baisch has collected from the literature 100 cases in which symphyseotomy had been performed and the conditions at a later childbirth recorded. Only 9 of the 100 women had been permanently benefited by the operation, so that later childbirth proceeded normally or with only version or forceps. There were 132 deliveries in all. When the pelvis was left permanently enlarged there had always been some interference with the healing of the wound—the poorer the surgical results, the better for the patient during succeeding deliveries. The results of pubiotomy are about the same In the 7 cases on record in which there were later childbirths, delivery occurred spontaneously when the child was small, but with a large child the pubiotomy had to be repeated. This operation has the advantage over symphyseotomy that the pelvis heals rapidly and regains its normal solidity. The patients can sit up in a few days, leave the bed after two weeks and leave the clinic in less than a month without the slightest disturbance in gait.

70. **Simultaneous Cancer in Ovary and Stomach.**—Engelhorn summarizes thirteen cases of the coincidence of cancer in ovary and stomach observed at Döderlein's clinic. In one instance the evidence was conclusive that the ovarian tumor was the metastasis of a primary carcinoma in the stomach. In three others the evidence showed two primary foci of malignant disease. In the other cases it was impossible to determine which was the primary cancer. When confronted with malignant ovarian disease the frequent coincidence of gastric cancer should always be borne in mind.

Beiträge zur Klinik der Tuberkulose, Würzburg.

VIII, No. 2, pp. 129-224.

74 *Treatment of Pulmonary Tuberculosis with Injections of Eucalyptus Oil. Blumel.
75 *Uniformity in Treatment of the Tuberculous. (Einheitlichkeit in der Behandlung Lungenkranker.) G. Liebe.
76 Intravenous Cinnamic Acid Treatment of Tuberculosis. (Intravenöse Hetolbehandlung bei Tuberkulose.) S. Goldschmidt and N. Knobel.
77 Chromogen of the Urochrome as Cause of Diazo Reaction. (Chromogen des Urochroms als Ursache der Ehrlichschen Diazo-Reaktion.) M. Weisz.
78 Which Tuberculous Patients Belong in the Sanatorium? (Welche Lungenkranke gehören in die Heilstätten?) G. Schroder.

74. **Eucalyptus Oil in Tuberculosis.**—Blumel cites Berliner's statements in regard to the benefit he has obtained in affections of the air passages from intramuscular injection of menthol and eucalyptus oil. Blumel has applied this treatment in twenty cases of pulmonary tuberculosis. In a little more than half the number benefit was apparent to some extent, but transient. The patients complained of the disagreeable odor of the eucalyptus oil in the breath, taking away the appetite, and many complained also of severe pain at the point of injection. Albuminuria was noticed also in several; it vanished on suspension of the medication.

75. **Uniformity in Treatment of Pulmonary Affections.**—Liebe refers in particular to the necessity for uniformity in the terms used to designate conditions, stages of disease, etc., so that comparison between the results obtained in different clinics will become possible. In most sanatoria a formula is made out for each patient as he enters, but each institution has its own formula. Why not all agree on a certain formula to be used in all, he asks, both for the entering patient, for the findings when examined and the records later? Turban's classification of the tuberculous into three stages has found general acceptance, but not so his abbreviations for the minuter classification and registration which deserve equal recognition. For instance, A signifies satisfactory general condition; X, not satisfactory; B expresses normal digestive capacity; Y, abnormal. The pulse is indicated by the figure alone, recorded mornings at rest. F represents maximum temperature above 38.4 C., and f a maximum of from 37.6 to 38.5 C. Tn represents normal temperature, taken in the rectum every two hours, at rest. M represents mixed infection, while the signs for plus and minus represent the presence and absence of tubercle bacilli. Tuberculous complications are expressed by the name of the affected organ alone, and other complications by the name of the affection. The earning capacity is represented by a, b and c, indicating, respectively, full, impaired and much reduced or negative earning capacity. The outcome of treatment is indicated as positive or negative. The time since

the first symptoms were observed is also mentioned, as 3 months, 6 weeks, etc., while an arrow pointing to the right indicates a progressive course and a dot in an inverted semicircle indicates arrest of the process. These simple abbreviations are a great step toward uniformity. Erni prefers to classify patients in four stages: 1, Infiltration or apical catarrh without fever; 2, with fever; 3, infiltration with caving in of the apex or caseous degeneration, and 4, distinct cavities.

Beiträge zur klinischen Chirurgie, Tübingen.

LIV, No. 1, pp. 1-237.

79 *Roentgen Study of Nasal Accessory Cavities and Their Affections. (Verwendung der X-Strahlen für die Bestimmung der nasalen Nebenhöhlen und ihrer Erkrankungen.) E. E. Goldmann and G. Killian.
80 Thyroidectomy. (Klinische Studien über die Strumektomie an der Hand von 670 Kropfoperationen.) E. Monnier.
81 Behavior of Intestine in Case of Incarceration, Especially at the Grooves of Constriction. (Verhalten des Darmes bei Incarceration.) M. Hofmann.
82 Congenital Goiter in New-born Infants and Its Operative Treatment. (Struma congenita der Neugeborenen.) K. Fischer.
83 Treatment of Gangrenos Hernias. E. Hesse.
84 Laceration of Biliary Passages by Contusions. (Zerreissungen der Gallenausführungsgänge durch stumpfe Gewalt.) Meissner.
85 Outward Luxation of the Foot Below the Astragalus. (Luxatio pedis sub talo.) Zumsteeg.
86 Etiology of Lateral Abdominal Hernia. (Seitliche Bauchbrüche.) Blauel.

No. 2, pp. 239-529.

87 *Primary Carcinoma of the Appendix. (Primäres Carcinoma des Wurmfortsatzes.) J. H. Zaaijer.
88 Granulation of Human Adipose Tissue. (Granulation des menschlichen Fettgewebes.) T. v. Verebely.
89 Operative Treatment of Obturator Hernia. K. Borszeky.
90 Cicatricial Stenosis of the Intestine After Strangulation of Hernia. (Narbige Darmstenosen nach Brucheinklemmungen.) Id.
91 Importance of the Left Flexure of the Colon. (Flexura coli sinistra.) Roith.
92 Blind Pouch Hour-Glass Stomach. Modification of Gastroenterostomy. (Blindsack Sanduhrmagen.) W. Kausch.
93 Sequester-Forming Abscesses in the Spleen. (Sequestrierende Milzabscesse.) H. Küttner.
94 Absorption in the Abdominal Cavity, as a Means of Defense. (Schutzvorrichtungen in der Bauchhöhle.) W. Danielsen.
95 Clinical and Anatomic Study of Tendovaginitis Crepitans. L. Weiss.

No. 3, pp. 531-825.

96 Experimental Research on the Influence of Constriction Hyperemia on the Healing of Fractures. (Einfluss der Stauungshyperämie auf die Heilung von Knochenbrüchen.) H. Hilgenreiner.
97 Supernumerary Phalanges in Single and Double Thumbs. (Hyperphalangie des Daumens.) Id.
98 New Methods of Disinfecting the Skin of the Field of Operation. (Haut-Desinfektion des Operationsfeldes.) M. v. Brunn. Id. Meissner.
99 Subcutaneous Leiomyoma of the Cheek and Its Histogenesis. E. Sehrt.
100 Experiences with Spinal Anesthesia. (Medullaranästhesie mit bes. Berücksichtigung des Alypins.) Kurzweily.
101 Internal Intestinal Fistulas. (Innere Darmfisteln.) F. Magenau.
102 Early Operation in Appendicitis. (Zur Frühoperation der Appendicitis.) O. Haist.

79. Roentgen Study of Nasal Sinuses and Their Affections.—Goldmann and Killian relate the particulars of thirty cases in which Roentgen examination of one or more of the sinuses was followed by an operation, confirming in every respect the findings of the skiagrams. The patient lies with his brow on the photographic plate and the Roentgen rays are passed through the skull in photographing the frontal sinus. The rays in some cases revealed the total absence of a frontal sinus.

87. Primary Carcinoma of the Appendix.—Zaaijer adds 5 personally observed cases to the 55 he has found on record of primary carcinoma in the appendix. There must have been inflammation in the appendix in some cases long before the carcinoma had begun to develop. This suggests that chronic appendicitis is an important factor in the etiology of cancer of this organ. Another striking feature is the youth of the patients—between 1 and 10 years in 1 case; between 10 and 20 in 7; between 20 and 30 in 22; between 30 and 40 in 15, the 6 remaining cases occurring in patients between 40 and 90. Very small carcinomas are found in the appendix from 10 to 30 years earlier than the large cancerous tumors in the intestines exhibiting distinct clinical manifestations. Left to itself, the carcinoma in the appendix would manifest itself later as a cancer of the cecum. It is probable that a number of cases of carcinoma of the cecum were in reality appendiceal cancers. In 25 cases the history of the patients has been followed since the removal of the cancerous appendix. Four are known to have been in good health for 5 years or more; 3 for 3 years; 4 for 2 or 3 years, and the others for 1 or 2 years. In only 3 instances was recurrence observed. Out of the total 52 cases in which the sex was known, only 18, or 32.6 per cent., were men. Histologically, the carcinomas of the appendix are of a very malignant type. In many instances there was no macroscopic evidence of the cancer. The article issues from Lanz' surgical clinic at Amsterdam.

Berliner klinische Wochenschrift.

October 21, XLIV, No. 42, pp. 1331-1366.

103 *Pathologic-Histologic Changes Induced by Alcohol. P. v. Baumgarten.
104 Action of Yohimbin on Female Genital Apparatus. F. Daels.
105 Combined Surgical and Roentgen Treatment of Cancer. (Kombinationsbehandlung bei bösartigen Neubildungen.) C. Beck.
106 Jakoby and Solms' Technic for Quantitative Determination of Pepsin. (Neue Methode quantitativer Pepsinbestimmung.) J. Witte.
107 *Paroxysmal Excessive Secretion of Intestinal Mucus. (Anfallsweise auftretende Darmschleimfluss.) A. Muszkat.

October 28, No. 43, pp. 1367-1398.

108 *Tardy and After-Action of Inhalation of Carbon Monoxid. (Spätwirkung und Nachwirkung des im Betriebe eingeatmeten Kohlenoxyds.) L. Lewin.
109 *Serum Diagnosis of Syphilis. J. Citron.
110 Diagnosis and Medicinal Treatment of Ileus. M. Einhorn.
111 *Research on the Guaiac Test for Invisible Blood. (van Deen's and Weber's Probe.) K. Schroeder.
112 *Importance of Hemoglobin in Treatment of Malarial Affections. (Bedeutung der Farbstoffe bei den Malariaerkrankungen.) Diesing.

103. Changes Induced in the Tissues by Subcutaneous Injection of Alcohol.—Baumgarten states, after much experimental research, that subcutaneous injection of alcohol caused hemorrhagic erosions in the stomach mucosa, probably the result of vascular spasm with arrosion of the anemic patches by the gastric juice. Similar injury of the walls of the gastrointestinal tract is probably responsible for the liver affections sometimes encountered in hard drinkers. The functions of the stomach and intestinal walls become impaired and thus absorption of toxic products generated in the digestive tract is favored. He found signs of cirrhosis of the liver in only about 5 or 6 per cent. of the cadavers of hard drinkers. In the overwhelming majority, death occurred in delirium tremens without evident anatomic cause, or else there were signs of severe intercurrent disease, generally croupous pneumonia.

107. Paroxysmal Excessive Secretion of Intestinal Mucus.—Muszkat relates the details of a case of paroxysmal excessive secretion of intestinal mucus without pain. The patient was a woman of 30 of the "scrofulous habitus," with a tendency to constipation and unstable vasomotor system. Occasionally she voided quantities of mucous fluid, almost entirely free from formed elements. The lack of colic in this and a few similar cases on record seems to class them apart from ordinary "mucous colic." The origin of these affections may be some inflammatory process or they may be exclusively neurogenic. Strauss has reported the case of a man with typical mucous colic resisting all treatment for months until the disease was traced to incipient carcinoma of the colon. In contrast to this was the case of an extremely hysterical woman whose chronic mucous colic suddenly ceased immediately after sigmoidoscopy.

108. Tardy and After-Action of Carbon Monoxid Intoxication.—Lewin reports a case of intoxication from carbon monoxid in a laundry where the gas used for heating the irons, etc., contained an unusual proportion of this element. Owing to transient defective ventilation, a number of the women employed in the ironing room were taken acutely sick. One of the women showed no symptoms at the time, but complained of nausea on the way home and two days later of pains in head, neck and back, with occasional vertigo and syncope. The heart action was weak, the pulse fast and irregular, the extremities cold. She remained for ten weeks in the hospital, but her demand for industrial indemnity later was refused. Lewin found her pulse 125 two years after the injury, the patient still complaining of headache and internal restlessness which prevented her from working for long at a time. His opinion of the case was that the patient had been entirely incapacitated for work during the first thirteen weeks after the injury, and that since then her earning capacity had been re-

duced by 25 per cent. for a year and a half and by 20 per cent. since then, when slight improvement became manifest.

109. **Serum Diagnosis of Syphilis.**—Citron announces two laws which he has deduced from his experience and research: The longer the syphilitic virus has acted on the body and the more frequent the recurrences of its manifestations, the more constant and the greater is the proportion of antibody in the serum. The second law is that the earlier mercurial treatment is instituted and the longer it is continued, the more frequently it is repeated, the better it is utilized by the body, and the shorter the period since its last application, the less the amount of antibody in the serum. Frequently the investigator finds none at all. These laws suggest the importance of examining the serum for antibody as an index for repetition of mercurial treatment, and also as a guide in consenting to the marriage of the patient. In this latter case negative findings are not an absolute guarantee, as refractory organisms are sometimes encountered which never produce any antibody. Examination of the serum will aid in collecting statistics in regard to the prevalence of syphilis in the army and elsewhere. He adds, in conclusion, that the serum diagnosis of syphilis surpasses in reliability and accuracy even the agglutination test for typhoid, but it requires such skill that it can never be used in general practice. It is a simple matter, however, to send some of the serum from the patients—the whole blood is not necessary—to specially equipped laboratories. The diagnosis is based on the deviation of complement. The discovery of antibody in the serum is an unfailing index of active syphilis, and its absence, of complete latency or entire cure.

111. **Test for Occult Blood.**—Schroeder has found that the proportion of blood has great influence on the findings with the guaiac test for invisible blood, different proportions reacting best with a certain concentration of the guaiac. A considerable proportion of blood actually hinders the specific reaction if the concentration is too strong. For this reason—and he presents ample evidence to sustain it—he advises three different concentrations for the test: He begins by making the ethereal extract of the feces and, while this is settling and filtering, he puts 5 or 6 drops of a 20 per cent. tincture of guaiac in a glass with 1 c.c. of absolute alcohol. In a second glass he puts 1 drop of the tincture of guaiac and 1 c.c. of alcohol, and in a third glass he puts 1 c.c. of alcohol and a few drops from glass No. 1. The first glass will appear reddish brown, the second yellow and the third almost colorless. Equal parts of turpentine are then added to each glass, and about 1 c.c. of the ethereal extract of the feces. For testing urine he recommends twice these amounts of guaiac and turpentine and 10 c.c. of urine for each glass. By this means approximately the most favorable concentration for the proportion of blood actually present in the feces or urine will be presented in one of the three glasses. If only one glass is used, he advises No. 2 as likely to be the most universally suitable.

112. **Importance of Hemoglobin in Malarial Affections.**—Diesing remarks that every steamer from the malarial districts of Africa brings home one or more persons suffering from acute or chronic quinin poisoning. They all present anemia and neurasthenia, and many have been rendered so susceptible to the action of quinin that even less than a grain will bring on hemoglobinuria again. He attributes the action of quinin in malaria not to a direct action on the parasites, but to the fact that the quinin combines with the hemoglobin in such a way that some of its elements are dissolved and pass in solution into the blood plasma, thus depriving the host and also the parasites of this element which is indispensable for the proliferation of the latter. The host can dispense with this element, as even without extraneous aid its life span is short, and the organism does not suffer materially from its loss. This action of the quinin on the hemoglobin can be studied under the microscope and in the reagent glass. The quinin dissolves out part of the hemoglobin and enters into a firm combination with the rest, depriving the new generation of hematozoa of the culture medium they need for their proliferation. The quinin attacks the hemoglobin just as the parasites do, and it induces elimination of the hematin in the same way, but it forestalls the parasites and leaves them nothing to grow on. After taking quinin the urine is darker, diaphoresis is increased, and sometimes there is bilious vomiting and hemoglobinuria—the same symptoms as are observed in untreated malaria. In conclusion he states that this rule of "no hemoglobin, no malaria parasites" suggests measures for prophylaxis and treatment. A number of drugs which act on hemoglobin are known, and we may discover one which has a more powerful action on the blood pigment with less injury to the general organism than quinin. He has derived great benefit from sulphur, potassium sulphuret internally and sulphur baths, which allowed the dosage of quinin to be much reduced or entirely discontinued.

Centralblatt für Gynäkologie, Leipsic.

November 2, XXXI, No. 44, pp. 1353-1400.

113 Cystoscopic Findings in Vesicovaginal Fistulas Cured by Operative Measures. (Cystoskopische Befunde bei operativ geheilten Blasen-Scheidenfisteln.) W. Hannes.
114 *Suprarenal Treatment of Osteomalacia. (Zur Adrenalinbehandlung der Osteomalakie nach Bossi.) F. Kaessmann.
115 *Ovarian Sarcoma During Pregnancy. E. Bircher.
116 Hernia After Publotomy. (Hernienbildung nach Hebosteotomie.) R. Mann.

114. **Suprarenal Treatment of Osteomalacia.**—Kaessmann relates the details of a case of recurring osteomalacia in which he applied the "Bossi cure," that is, injection of suprarenal extract. The patient had presented symptoms of osteomalacia, especially inability to move the legs, after each of her last three pregnancies, the symptoms gradually subsiding by the sixth week, although she found that she was constantly growing shorter. After the last delivery she was completely paralyzed in the legs, and the pelvis and femur were extremely tender. Under suprarenal treatment marked benefit was soon attained, and the patient by the tenth day after delivery was able to walk a little, and was free from pain. She left the hospital then with instructions to return every second day for further injections, but she felt so well that she failed to return for a week or so. When she reappeared she was very much worse, being unable to stand or walk, with intense pains in legs and thighs. No benefit was apparent after five daily injections of the suprarenal extract, and the treatment was then discontinued and castration advised. Kaessmann adds that possibly the results might have been better if the dosage had been larger. He injected 0.005 gm. of 1 to 1,000 adrenalin, once or twice a day for 9 plus 5 days.

115. **Ovarian Sarcoma During Pregnancy.**—The patient was a previously healthy woman of 31 in the fourth month of her first pregnancy. She had noticed for a month or so that the right side of the abdomen was growing larger than the left, and during the last month had suffered from pain in the right side, but without symptoms on the part of the stomach or other organs. Laparotomy revealed a fibrosarcoma of the right ovary which had spread to the uterus. It was shelled out from the uterus wall and the other organs involved were removed. The growth weighed 770 gm. The pregnancy continued to the ninth month and a living child was born, but it died in six weeks. The patient has been in the best of health during the three years since, having passed through a second pregnancy in the interval with delivery of a healthy boy at term.

Deutsche medizinische Wochenschrift, Berlin.

October 31, XXXIII, No. 44, pp. 1809-1848.

117 Latest Theories in Regard to Hysteria. G. Aschaffenburg.
118 *Tests of Intelligence. (Intelligenzprüfung.) O. L. Klieneberger.
119 Absence of Glycogen in Leucocytes in Myeloid Leukemia. Its Importance in Immunity and Phagocytosis. (Fehlen des Glykogens in den Leukocyten.) A. Wolff-Eisner.
120 *Epidemic Cerebrospinal Meningitis in Children at Berlin. Cassel.
121 Dislocation of Tarsometatarsal Articulations. (Luxationen im Lisfrancschen Gelenk.) Bommes.
122 Insignificant Practical Value of Mercury Suppositories in Syphilis. F. Hoehne.

118. **Tests of Intelligence.**—Klieneberger tabulates the findings in tests of school children, students and young soldiers in respect to their ability to reply to a number of simple questions, alike for all. It was found that the higher the intelligence, the quicker came the answer to the question, consequently the interval between the question and the response can be accepted as an index of mental ability. The interval

was shortest with the students and longest with young soldiers, while high school pupils were between these extremes.

120. **Experiences with Epidemic Cerebrospinal Meningitis.**—Cassel urges lumbar puncture in every case of cerebrospinal meningitis, especially in infants, in order to differentiate and isolate the epidemic variety. In none of the 49 cases in Berlin in 1905 was he able to discover contagion of other individuals. He refers to the important work done by Hübener, Kutscher and Vagedes in military circles. They were able to examine all the members of battalions in which cases of epidemic meningitis had occurred, and by isolating the sound bacilli carriers were able to arrest the epidemic in its incipiency. The healthy bacilli carriers are probably a greater source of danger than the sick confined to their beds.

Münchener medizinische Wochenschrift.

October 29, LIV, No. 44, pp. 2171-2216.

123 Infant Feeding and Side-Chain Theory. I. M. Pfaundler.
124 Dystrophy in Infants. 2. Id.
125 Potential Supply of Complement with Natural and Artificial Feeding. 4. (1 to 4. Zur Physiologie und Pathologie der Säuglingsernährung.) M. Pfaundler and Heimann.
126 Theory of Immunity: Opsonins. A. Strubell.
127 *Surgical Treatment of Incipient Tuberculous Process in Apex of Lung. (Chirurgische Behandlung der beginnende Lungenspitzenphthise.) K. Hart.
128 Three Sporadic Cases of Cerebrospinal Meningitis. (Epidemische Genickstarre.) H. Bennecke.
129 Connection Between Bronchial Asthma and Pulmonary Edema. H. v. Hoesslin.
130 *Elimination of Carbohydrates in Urine in Delirium Tremens. (Kohlehydraturie beim Alkoholdelir.) M. Kauffmann.
131 Multiple Hemangiomas in Intestines. (Multiple kavernöse Hämangiome im Darme.) S. Ohkubo.
132 *Sarcoma and Trauma. O. Orth.
133 To Secure Constant Poles with the Wimshurst Electric Apparatus. (Mittel zur Erzielung konstanter Pole bei der Influenzsmaschine.) G. Mayerhausen.

127. **Surgical Treatment of Incipient Apical Tuberculosis.**—Hart remarks that we are entering an untried path in attempting surgical treatment of apical tuberculosis, that is, resecting enough of an abnormally rigid chest wall to mobilize it and allow the lung beneath more space for expansion. He is prosector at the Schöneberg hospital and his findings corroborate Freund's assertions in every respect. Freund's communications and Seidel's application of his theories in the clinic were mentioned recently in THE JOURNAL, October 26, page 1482. Hart has found that there are two forms of malformation of the thorax which affect the lung beneath. One is the result of arrested development, the thorax is more pointed, suggesting that of the lower animals. This malformation becomes most prominent at about the time of puberty, the ossification and rigidity of the first ribs preventing the chest from assuming normal shape. The deep slant of the ossified and rigid first rib has a marked repressing influence on the expansion of the lung beneath, and actually compresses the lung tissue. The other form of the anomaly is due to ossification of the upper cartilages with advancing age. This also interferes with expansion of the lung especially at the apex, but there is no direct compression of the apex tissue as with the juvenile form. Nature sometimes mobilizes the parts by forming an articulation here, and thus suggests the proper method of treatment in such cases as this new-formed articulation frequently accompanies healed tuberculous apical lesions. In the juvenile form there is no such formation of an articulation, and consequently the only hope is by help from without. Seidel's experience shows that the surgical intervention required is comparatively slight and harmless, while the results were brilliantly successful. See abstract 53.

130. **Elimination of Carbohydrates in Urine in Delirium Tremens.**—Kauffmann has frequently noted large proportions of reducing elements in the urine in delirium tremens which vanished after the attack. He remarks that it is by no means the hardest drinkers who have delirium tremens. The alcohol seems to have a specially harmful action on the medulla oblongata in some cases, and even slight disturbances in its functioning may derange the carbohydrate metabolism. The toxic products thus generated may affect injuriously still other parts of the brain. Profuse sweating, salivation and excessive bronchial secretion have been frequently observed in delirium tremens, indicating vasomotor disturbances explainable by functional disturbances in the medulla. These vasomotor disturbances sometimes suggest those of diabetes. The glycosuria observed in delirium tremens has been regarded as an accompaniment of the psychic disorder, but Kauffmann suggests that the toxic substances responsible for the glycosuria may be responsible also for the psychic phenomena. He suggests that the tendency to delirium and the tendency to diabetic coma are probably both due to preceding injury of the brain, causing defective functioning and lowering its resistance.

132. **Sarcoma and Trauma.**—Orth reports two cases showing a connection between a preceding trauma and sarcoma. In the first, a man of 42 suffered a contusion of the left testicle. No appreciable harm followed for a year, but then the parts swelled and a sarcoma developed and was removed. Recurrence three years later involved the entire pubic region. In the second case, periostitis developed after extraction of the broken roots of a molar tooth in the lower jaw and a tumor formed, which was excised. Recurrence six months later was likewise removed, the microscope revealing a giant-celled sarcoma. The patient was a girl of 14 whose grandfather had had carcinoma of the upper jaw.

Nordiskt Mediciniskt Arkiv, Stockholm.

XL, Surgery, No. 2.

134 *Operative Treatment of Gastric Ulcer. (Ulcus ventriculi.) E. Key. Commenced in No. 1.
135 *End Results of Operative Treatment of Appendicitis. G. Nyström.

XL, Internal Medicine, No. 2.

136 Biology of Typhoid and Paratyphoid Bacilli. (Biologie des Erregers des Darmtyphus.) K. Koraen.

134. **Surgical Treatment of Ulcer of Stomach or Jejunum.**—Key concludes his extensive review of this subject and report of the experiences at Berg's and Akerman's clinic with the statement that surgical treatment is indicated in all cases of pronounced stenosis in the stomach, pylorus or duodenum; in perigastric adhesions inducing retention or severe pain; in actual ulcer formation in stomach or duodenum accompanied by motor insufficiency, after the failure of medical-dietetic measures or when such measures offer no prospects of relief. An ulcer in the pylorus or duodenum indicates operative treatment more imperiously than an ulcer in the stomach, and suspicion of perforation, of course, demands immediate intervention. He reports 5 cases of peptic ulcer in the jejunum with recovery of 2 of the patients, and has found in the literature records of 49 others. The majority of the patients were men, while his statistics show that ulcer of the stomach occurs more frequently in women. The peptic ulcer developed in 33 cases after anterior and in 13 after posterior gastroenterostomy; 4 times after the Y operation and 5 times after gastroenterostomy with enteroanastomosis. The Murphy button was used in 8 instances. The general impression from the material reviewed seems to be that gastroenterostomy is unable to prevent cancerous degeneration later of an ulcer. Resection is much more certain in this respect and should be regarded as the standard operation. Roentgen examination before and after operation, with study of the chemistry of the stomach, will throw light on the mechanism and results of the various methods of operative treatment.

Norsk Magazin for Lægevidenskaben, Christiania.

October, LXVIII, No. 10, pp. 1145-1240.

137 *Pathologic Anatomic Research on Acute Poliomyelitis. F. Harbitz and O. Scheel.
138 Case of Sarcoma in Spine. (Sarkom i rygsöilen.) O. Frich.
139 Vertebral Meningocele Combined with Teratoma. P. Bull.

137. **Pathologic Anatomy of Acute Poliomyelitis.**—This article by Harbitz and Scheel is accompanied by six colored plates out of a larger number which will be published in a more comprehensive memoir on the subject. The findings seem to imply that the lesions are the result of a specific virus, and that they are not the result of action at a distance but are due to the actual penetration of the microbes into the central nervous system, the meninges, the cerebrospinal fluid and probably into the nerve substance itself. There is considerable evidence, they add, for the assumption that the infection occurs by way of the digestive tract, and that the nervous system becomes infected either through the lymph or blood. The latter assumption is the more plausible, and they regard it as probable also for the etiology of cerebrospinal meningitis.

Gazzetta degli Ospedali, Milan.

October 13, XXVII, No. 123, pp. 1283-1298.

140 Diagnosis of Suppuration in the Labyrinth. (Pio-labirintite.) C. Bruzzone.
141 Operative Treatment of Stab Wounds in Larynx and Trachea. (Ferite da punta e taglio del condotto laringo tracheale.) G. Caponetto.
142 Relations of Liver with Assimilation of Heterologous Albumin. (Fegato ed albumine eterologhe.) D. Pacchioni and C. Carlini.
143 Psoriasis Cured by Exposure to Sunlight. (Psoriasi volgare guarita completamente coll' azione diretta dei raggi solari.) E. Domenici.
144 Real and Feigned Neuralgia in Right Testicle. E. Curti.
145 *Appendiceal Painful Dysuria. (Stranguria appendicolare.) A. Luxardo.
146 Advantages of Zinc Chlorid in Treatment of Venereal Ulcers. (Cura dell' ulcera venerea.) P. Bertoli.

October 20, No. 126, pp. 1315-1330.

147 *Diphtheria Antitoxin in Treatment of Erysipelas. N. Federici.
148 Postoperative Bronchopulmonary Complications. G. Baroni.
149 Hemoglobinuria and Malaria. E. Lai.
150 Recurrence of Mammary Carcinoma. (Recidiva di carcinoma mammario.) G. Stella.
151 *Treatment of Tuberculous Peritonitis. v. Fontana. Id. D. Gentile.
152 *Massage of Uterus with Hydatidiform Mole. G. Alessandri.

October 27, No. 129, pp. 1347-1362.

153 Staining of Morphologic Elements of Effusions, etc. (Colorazione vitale degli elementi morfologico negli essudati e transudati.) E. Savonuzzi.
154 Hemoptysis as Vicarious Menstruation in Mother, Sister and Two Daughters. (Emottisi quale funzione vicariante della mestruazione.) C. Ventura.
155 *Treatment of Croupous Pneumonia with Saline Infusion. (Cura della polmonite crupale con le ipodermoclisi.) O. Magi.
156 Extract of Male Fern in Treatment of Tapeworm. (Estratto etereo di felce maschio nella cura della tenie.) P. Barbagallo.

145. **Appendiceal Strangury.**—Luxardo reports three cases in which boys of 13 presented painful dysuria for which no cause could be discovered until tenderness at McBurney's point suggested appendicitis. The appendix was found congested in all, but with no serious changes. Its removal, however, was followed by the complete subsidence of the strangury. The urine had been approximately normal in each instance. The coincidence of the sex and age of the three patients is remarkable. The recurring dysuria was evidently of reflex origin, a sero-serosa reflex acting simultaneously on the appendix and on the bladder. In the personal case described the appendix was found included in a congenital inguinal hernia.

147. **Diphtheria Antitoxin in Erysipelas.**—Federici reports what he says is the seventh case on record of facial erysipelas treated with diphtheria antitoxin injected subcutaneously and applied locally. The effects were eminently favorable. He used 10,500 units, giving 1,500 by injections and the rest by local application. The patient was a man of 50, and other measures were suspended after this treatment was commenced.

151. **Treatment of Tuberculous Peritonitis.**—Fontana declares that the cases of tuberculous peritonitis with ascites are the ones that display the greatest tendency to spontaneous healing, and that operative intervention in these cases is useless. He reports the details of twenty-two cases in which the patients recovered under medical measures alone, and are still in good health after from two to ten years. In the first case the patient was a primipara and the affection commenced with an acute onset suggesting typhoid fever until differentiated by the ascites. Under two months of medical treatment the affection retrogressed and no traces of an abdominal affection could be detected during minute examinations five and ten years later. In the second case a young woman had two attacks of tuberculous peritonitis at four-year intervals, each subsiding under medical measures alone. In a third case the patient, a girl of 13, passed through the ascitic phase of tuberculous peritonitis without treatment and the fibrocaseous phase subsided under medical measures: Rest in bed, ample ventilation, subcutaneous injection of iodin, iodid and guaiac, supplemented by iodin externally to the abdomen, applied in a 5 per cent. iodoform salve, with occasionally tincture of iodin. Blisters to the abdomen were used in one case and the effusion was tapped in one case. Carbonate of guaiac and quinin were given by mouth, with tonics after the subsidence of the acute phase. Absorption of the ascitic fluid was hastened by abdominal massage. These measures proved effectual in 9 patients with ascites. In 7 others the ascitic phase was past when first seen; marked improvement was obtained and a clinical cure, but the products of specific inflammation can still be detected in the abdomen, and it is impossible to foresee the outcome at present. In 12 of the 22 cases pleuritic complications were manifest. He argues that a laparotomy in the cases with ascites would have been superfluous, as all the patients recovered without it, while such a serious operation might have done harm in some instances.

152. **Massage of Uterus in Case of Hydatidiform Mole.**—Alessandri's patient was a xii-para of 36, at nearly the third month of pregnancy, presenting symptoms of abortion but with certain peculiarities that suggested a molar pregnancy. In order to hasten expulsion of the mole he tamponed the vagina and applied massage to the uterus, commencing light but continuing to quite energetic massage, stroking from above downward. The massage was repeated morning and evening the next day, after which the mole was spontaneously expelled.

155. **Saline Infusion in Treatment of Croupous Pneumonia.**—Magi advises saline infusion in croupous pneumonia when there are indications of intense toxemia, and describes a case in which it was successfully applied. He injected from 250 to 320 gm. of salt solution daily for six days, supplemented by a rectal injection occasionally. The Italians make considerable use of this treatment to combat the toxemia.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

PRINCIPLES AND PRACTICE OF MODERN OTOLOGY. By John F. Barnhill, M.D., Professor of Otology, Laryngology and Rhinology, Indiana University, School of Medicine, and Ernest D. Wales, B.S., M.D., Associate Professor of Otology, Laryngology and Rhinology, Indiana University, School of Medicine. Pp. 575, with 305 Illustrations. Cloth. Price, $5.50. Philadelphia: W. B. Saunders Co., 1907.

SURGICAL APPLIED ANATOMY. By Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D., F.R.C.S., Consulting Surgeon to the London Hospital. Fifth Edition. Revised by Arthur Keith, M.D., F.R.C.S., Examiner in Anatomy, Royal College of Surgeons, England and University of Leeds. Cloth. Pp. 640, with 107 Illustrations. Price, $2.25. Philadelphia: Lea Brothers & Co., 1907.

THE TREATMENT OF FRACTURES: with Notes on a Few Common DISLOCATIONS. By Charles L. Scudder, M.D., Surgeon to the Massachusetts General Hospital. Sixth Edition, Revised and Enlarged. Cloth. Pp. 635, with 854 Illustrations. Price, $5.50. Philadelphia: W. B. Saunders Co., 1907.

A MANUAL OF THE PRACTICE OF MEDICINE. By A. A. Stevens, A.M., M.D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania. Eighth Edition, Revised. Flexible Leather. Pp. 558. Price, $2.50. Philadelphia: W. B. Saunders Co., 1907.

THE PREVENTION OF INFECTIOUS DISEASES. By John C. McVail, M.D., D.P.H. Camb., F.R.S.E., Ex-President of the Incorporated Society of Medical Officers of Health of Great Britain. Pp. 290. Cloth. Price $2.75. London: MacMillan & Co., 1907.

REPORT OF THE DEPARTMENT OF SANITATION OF THE ISTHMIAN CANAL COMMISSION FOR THE MONTH OF SEPTEMBER, 1907. By W. C. Gorgas, M.D., Assistant Surgeon-General, U. S. Army. Pp. 70. Washington: Government Printing Office, 1907.

THE OPERATING ROOM AND THE PATIENT. By Russell S. Fowler, M.D., Professor of Surgery, Brooklyn Postgraduate Medical School, Brooklyn. Second Edition, Enlarged. Pp. 284. Cloth. Price, $2.00. Philadelphia: W. B. Saunders Co., 1907.

HOSPITAL TRAINING-SCHOOL METHODS AND THE HEAD NURSE. By Charlotte A. Aikens, Associate Editor of the *National Hospital Record*. Cloth. Pp. 260. Price, $1.50. Philadelphia: W. B. Saunders Co., 1907.

TABACO-TABACOMANIA-TABAQUISMO. By Dr. E. Lavalle Carvajal. Paper. Pp. 188. Mexico: Imprenta Y. Fototipiá de la Secretariá de Fomento, Callejón de Betlemitas, numero 8, 1907.

SYPHILIS IN ITS MEDICAL, MEDICOLEGAL AND SOCIOLOGIC ASPECTS. By A. Ravogli, M.D., Dermatologist to City Hospital of Cincinnati. Pp. 518. Cloth. New York: Grafton Press, 1907.

REPORT OF THE DIRECTOR OF THE CHEMICAL AND BACTERIOLOGICAL LABORATORY FOR THE YEAR 1906-1907. Paper. Pp. 86. Office of Health, Charities and Corrections, San Juan, P. R.

ACCIDENT BULLETIN No. 24. (With reports also for Year Ended June 30, 1907.) From Interstate Commerce Commission, Washington, D. C.: Government Printing Office, 1907.

THE REDUCTION OF CANCER. By the Hon. Rollo Russell, Author of Strength and Diet. Cloth. Pp. 62. Price 50c. New York: Longmans, Green & Co., 1907.

STATUTES OF THE COMMONWEALTH RELATING TO THE MASSACHUSETTS MEDICAL SOCIETY. Paper. Pp. 22. Boston: David Clapp & Son, 1907.

MEDICAL COMMUNICATIONS OF THE MASSACHUSETTS MEDICAL SOCIETY. Paper. Pp. 100. Boston: David Clapp & Son, 1907.